

Product Catalogue

Products for Radiotherapy

September 2015



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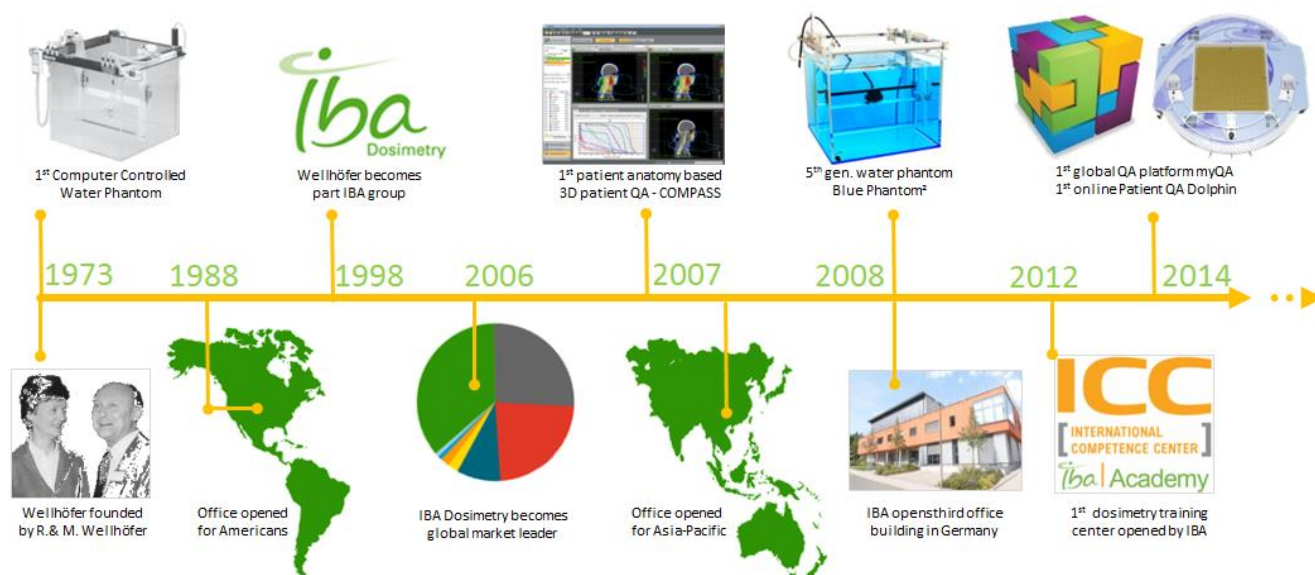
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About IBA Dosimetry



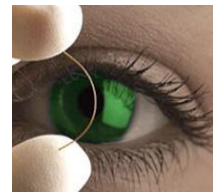


IBA (Ion Beam Applications S.A.) develops, manufactures and supports medical devices and software solutions for cancer treatment by proton beam therapy, for cancer diagnosis and for patient quality assurance (Dosimetry). In addition, the company partners with healthcare leaders to provide cancer clinics and academic health centers with a fully-integrated approach of the patient flow.

IBA Dosimetry GmbH – as part of the Belgian IBA Group – is globally highly successful with more than 40 years of experience in the field of dosimetry for cancer treatment products. Based mainly in Schwarzenbruck, Germany, IBA Dosimetry also has offices in the U.S. and China.



IBA Dosimetry offers a full range of cutting edge innovative solutions and services that enable medical physicists and radiologists to maximize efficiency and minimize errors in Radiation Therapy, Medical Imaging Quality Assurance and Calibration procedures, and thereby increase treatment quality, safety, and efficiency for the patient.

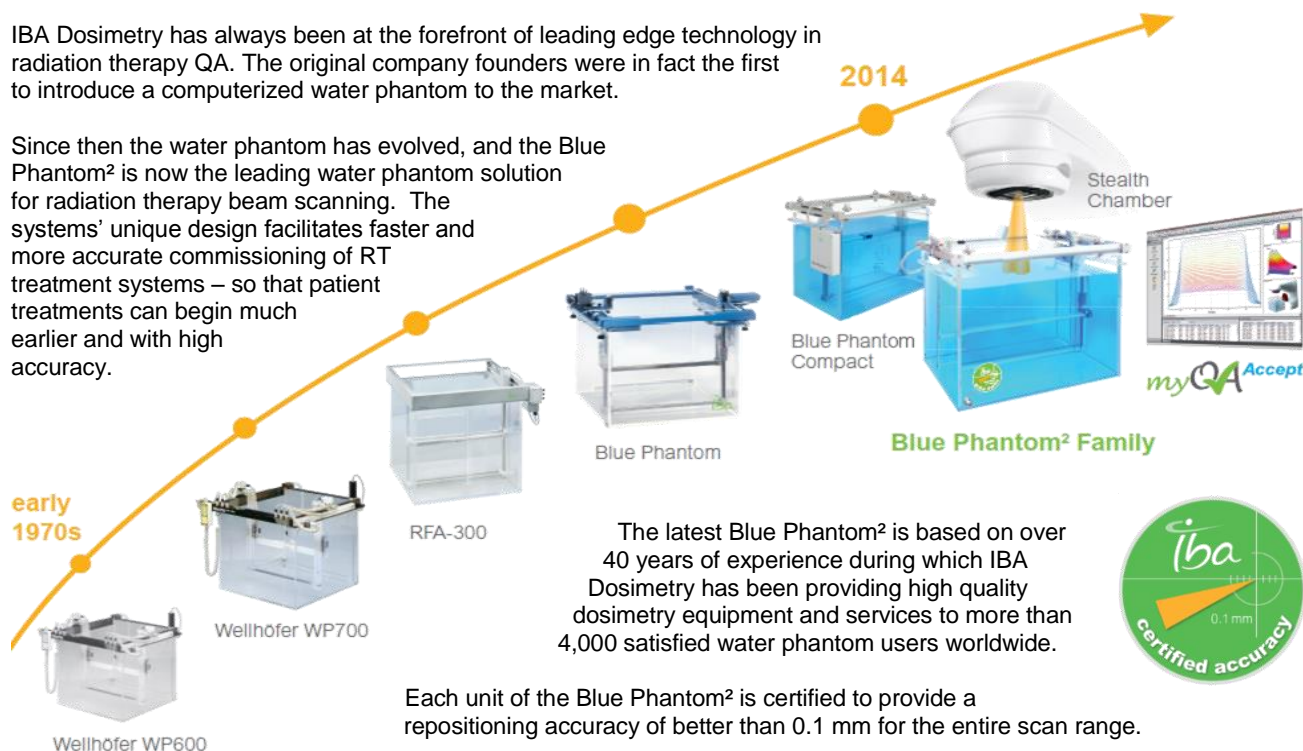


<p>Radiation Therapy QA</p> 	<p>Diagnostic Imaging QA</p> 	<p>Fiducial Markers</p> 	<p>Secondary Standard Dosimetry Laboratory</p>  
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Fastest, Most Accurate, Most Reliable

IBA Dosimetry has always been at the forefront of leading edge technology in radiation therapy QA. The original company founders were in fact the first to introduce a computerized water phantom to the market.

Since then the water phantom has evolved, and the Blue Phantom² is now the leading water phantom solution for radiation therapy beam scanning. The systems' unique design facilitates faster and more accurate commissioning of RT treatment systems – so that patient treatments can begin much earlier and with high accuracy.



Through the years, IBA has continued its legacy of developing and delivering many “firsts” and “innovations” to the dosimetry market. Another example is COMPASS, the first patient-based 3D plan verification system.



Just recently, IBA released myQA, a new global quality assurance platform that offers full support throughout all QA applications and provides the user access to their various software modules and data from one intuitive platform – anytime and anywhere.

The release of this highly anticipated solution marked a milestone for IBA Dosimetry as it is also a big step towards IBA's vision in connecting its global users with each other.

Another pioneering, much anticipated solution is the Dolphin, the first and only online treatment measurement system that gives the user *exact control* over real delivered dose, fraction by fraction *until the last fraction*.

With these and other innovative solutions, IBA Dosimetry has proven to be a reliable partner in radiation therapy QA.



Made in Germany. Supported Globally.

At IBA, we have a strong commitment to our customers by providing quality Service and Care.

We strive to offer support solutions that keep your products and workflow at peak efficiency, and our worldwide service teams are dedicated to providing local support for our products whenever and wherever needed.



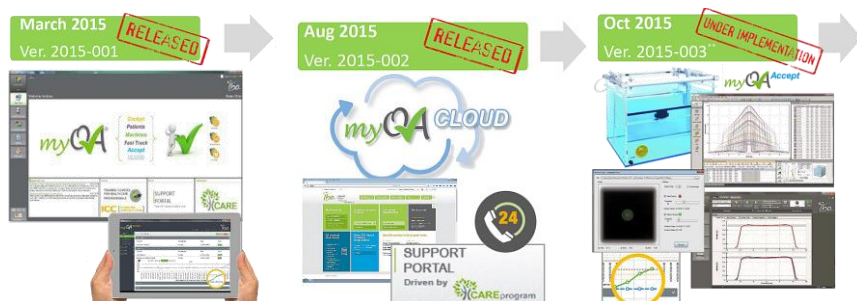


Multiple annual software updates* – Best value for money!

- Receive all future updates of your myQA modules
- Benefit from advanced services and latest QA protocols
- Network with peers and benefit from IBA's CAREprogram

Every purchased software is already covered from the beginning by a Software Coverage (service contract) for a minimum of two years to ensure that the software modules are continuously updated with the latest functionality. The Software Coverage is automatically extended yearly.

The Software Coverage is free of charge for the first 12 months. It can be cancelled in written form latest three months before the start of each automatic extension period.



The International Competence Center (ICC) – providing exceptional training in a clinical environment.

The innovative International Competence Center (ICC) training facility was opened at the IBA Dosimetry headquarters in Schwarzenbruck, Germany in July 2012, and it is now one of the most modern and sophisticated training centers for Dosimetry with its state-of-the-art equipment and technology for hands-on trainings.

The ICC is the first training center in the world where trainees can simulate treatment verification and quality assurance systems without patient traffic, in a facility that mirrors a real clinical environment.



The aim of the ICC is to train healthcare professionals in using Radiation Therapy and Medical Imaging Dosimetry equipment safer and more efficiently.

The training courses are held by renowned clinical speakers as well as by highly qualified IBA staff members, who not only provide participants with hands-on trainings, but also keep them updated about the latest news in Radiotherapy and Dosimetry.

Apart from the trainings in the ICC facilities at the IBA Dosimetry headquarters, courses are offered in selected top-level clinics worldwide.

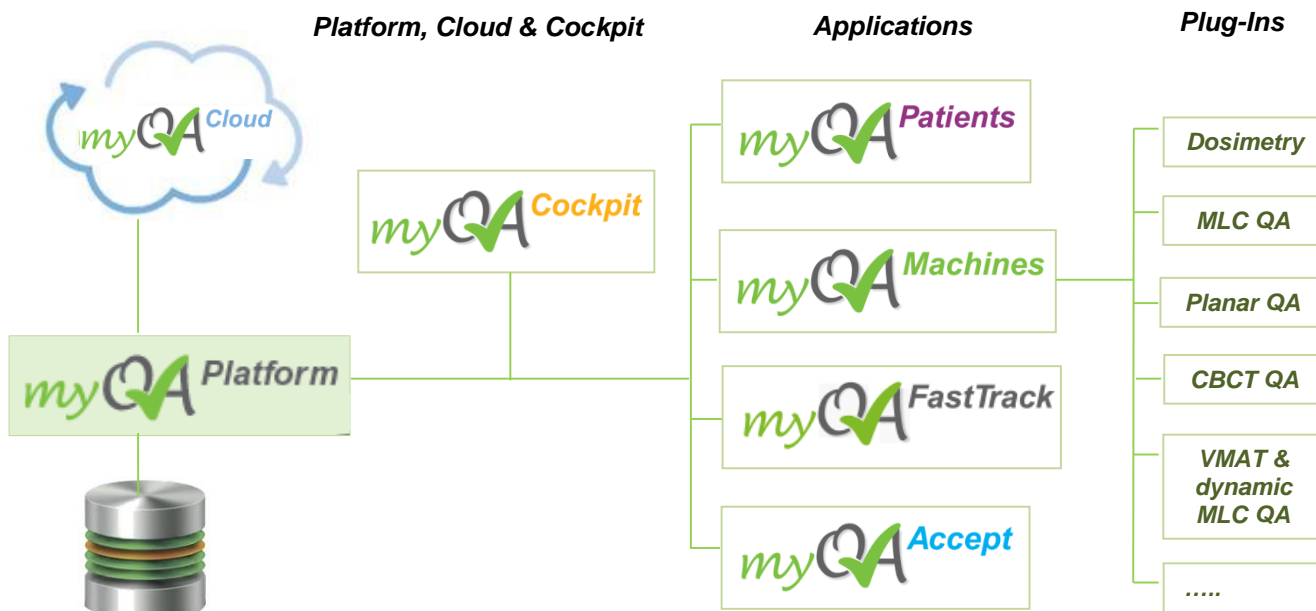


myQA

Global QA Platform

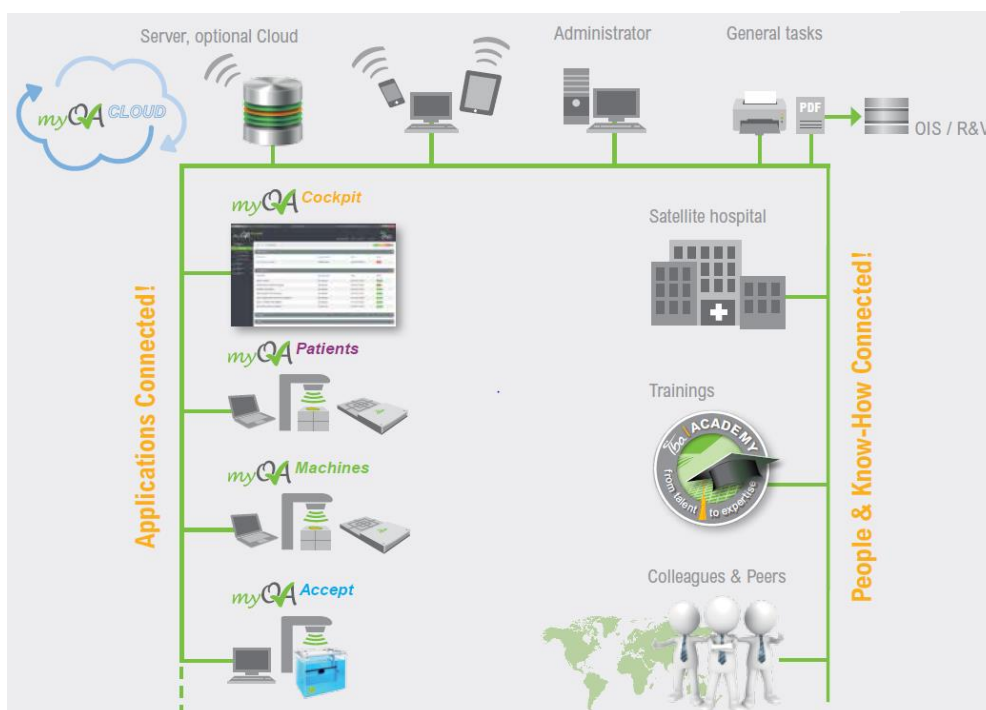
myQA – your Global QA Platform

myQA is a new global QA platform that connects different applications, people, and know-how. One software platform and one database server enables easy comparison with full data control, data efficiency and data compliance.



All results can be benchmarked in the **myQA Cloud** to get full confidence in your QA procedures and results.

You will never miss any crucial QA information by using the browser based **myQA Cockpit**.



**Images presented in this document may vary from the actual screen shots of the software. IBA reserves the right to modify the screen layout without prior notice.*

Platform, Cloud, and Cockpit.

One-time basic package per site or database, enabling your system to be **All-in-One**, **All Connected**, and **All Secure**.

Benchmark your QA data to gain full confidence



All Connected.

Item Number
MQ00-100



All Secure.

Never miss any key information



Item Number
MQ01-000

Have full control of your data



All-in-One.

Item Number
MQ00-000



myQA Applications

- myQA Patients
- myQA Machines
- myQA FastTrack
- myQA Accept

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myQA Platform

Your Global QA Platform:

All-in-one. All connected. All secure.

The **myQA Platform** is a computer program hosting interfaces and modules, providing access to all IBA and IBA-licensed QA applications in order to fulfill machine and/or patient-related quality control activities.



- All users and all applications in one platform -- assures compliance and enables:
 - efficient and flexible workflows
 - easy comparison of data from different applications
 - consistent results
 - One platform to host all IBA and IBA-licensed QA applications and plug-ins such as:
 - myQA Cockpit
 - myQA Machines
 - myQA Patients
 - myQA Accept
 - myQA Cloud
 - myQA FastTrack, etc.
 - Central data base server for:
 - data safety (storage, archiving, backups)
 - data control (data mining, filters, search functions), and
 - data security (user management, access rights)
 - enabling easy comparison of data from different applications
 - Central management of all users, licenses, facilities, treatment units, devices, detectors and calibrations.
 - Common configurations, protocols, printing & reporting tools.
 - Join myQA from IBA:
 - largest customer base in dosimetry
 - connect to other myQA users around the world
 - Includes: **myQA Cloud**
 (Note: This feature is deactivated by default, and is activated upon Customer's request)
 - Share expertise and stay up-to-date. Connect to the IBA Service Portal, the International Competence Center, the myQA RSS Feed and to your peers.
 - Ensure your compliance, benefit from advanced services and get all future product extensions that IBA plans through a **myQA Coverage** maintenance contract (please contact IBA for further details)
 - Protect your investment through a scalable and extendable solution.
 - Site License.
- Note:** **One site license of the myQA Platform is mandatory to run any of the myQA applications.**
- For recommended computer and database server requirements, please refer to the specifications provided under the separate section entitled "System Requirements".*

Ordering information

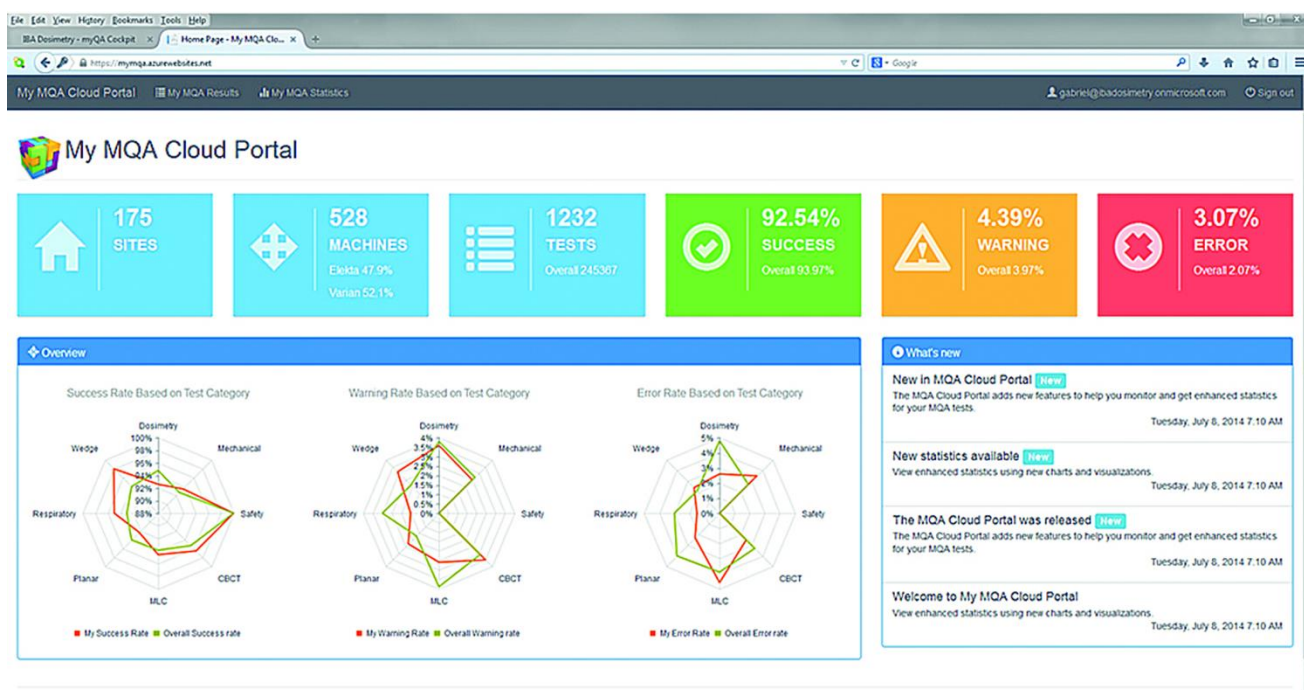
MQ00-000	myQA Platform Required for all myQA applications
Optional	
MQ00-100	myQA Cloud
MQ01-000	myQA Cockpit



The **myQA Cloud** is a web application – a component of the myQA software package – that allows users to perform benchmarking of their QA data for best practice checks, and to connect (anonymously) with peers and data from around the world, and thereby build confidence in their procedures, results and performance.



All Secure.



Join myQA from IBA!

- Tap the knowledge base of the largest customer base in dosimetry
- Connect to other myQA users around the world

Note:

The **myQA Cloud** is included in the **myQA Platform** (Item Number MQ00-000), but is deactivated by default, and is activated only upon the Customer's request. It is offered for free during the market introductory phase.

Ordering information

MQ00-100 myQA Cloud

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myQA Cockpit

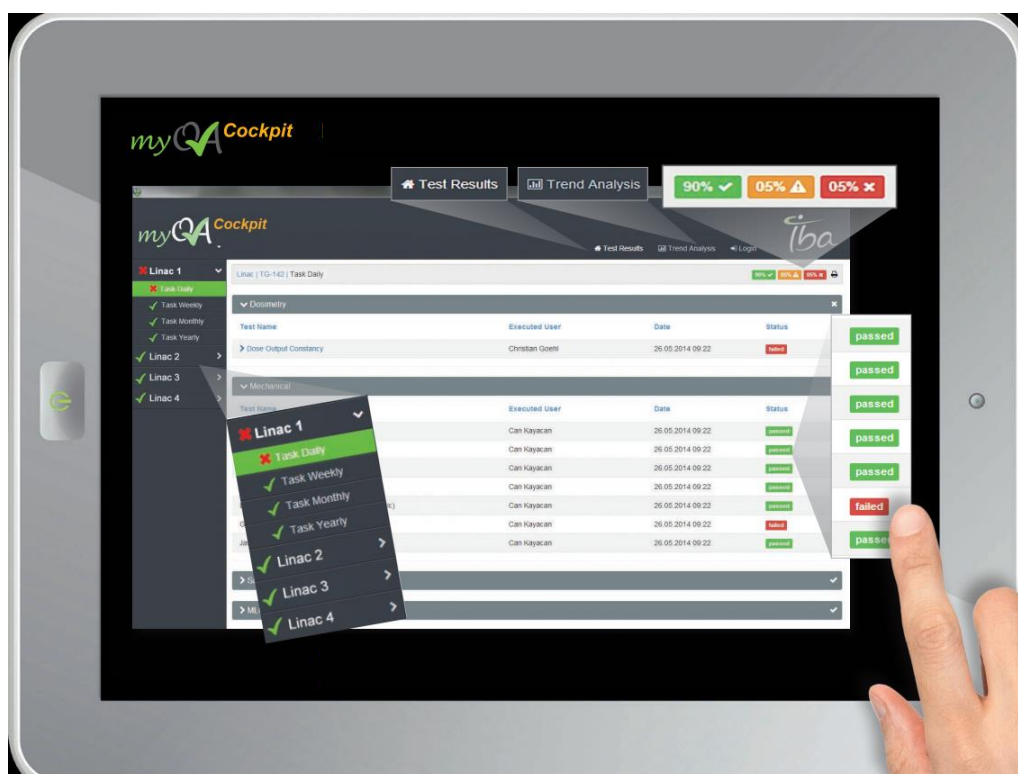
Never miss any key information!

A complete overview of your machines and patient data. Anytime, anywhere!

The **myQA Cockpit** is a software that retrieves and displays previously measured or stored QA results from treatment and diagnostics devices as well as patient QA data. It addresses medical physicists and radio oncologists with a grouped overview of test results, work tasks and trend analysis on existing data. Multiple users can use the myQA Cockpit from different computers at the same time.



All Connected.



The **myQA Cockpit** provides you:

- Instant status overview of your department, treatment units and patient treatment plans.
- Quick access and easy tracking of machine QA and patient QA including trends and statistics
- Simple and clear reporting in traffic light style
- Browser-based application requiring no local installation
- Platform independent access on PCs and tablets (Windows, iOS, Android)
- Accessible form anywhere in your clinic network.
- Site license for unlimited number of users.

Ordering information

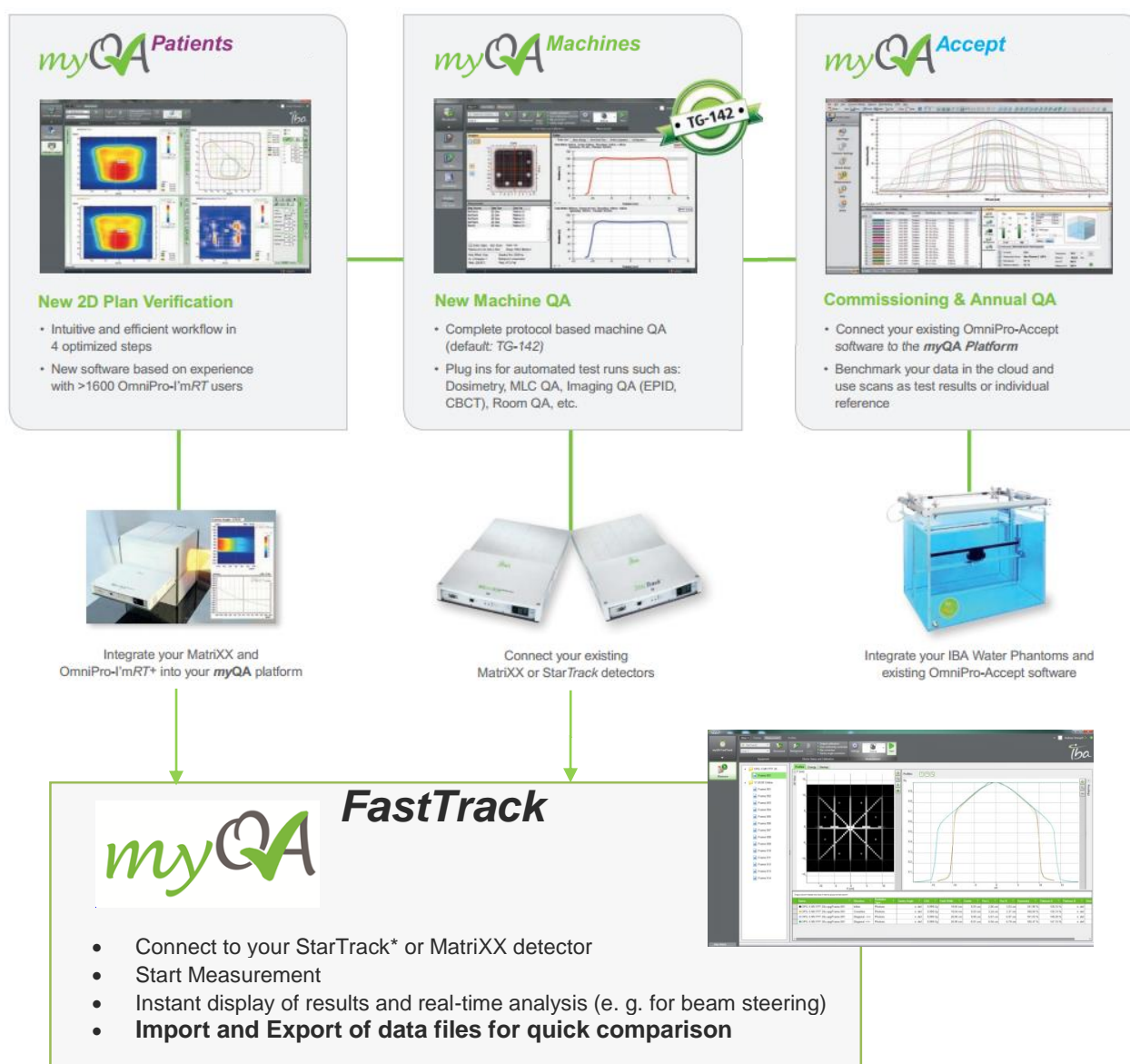
MQ01-000 myQA Cockpit

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myQA Applications

Connect all your QA applications and Cross Check your data.

The **myQA** system consists of the myQA software and the supported dose measurement devices. Depending on the application, myQA provides different applications modules for dosimetry QA (Quality Assurance) including machine QA, patient QA, and radiotherapy QA such as patient positioning and localization tools, imaging, and treatment planning in the field of radiotherapy and medical imaging.



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myQA Machines

Software application for your complete Machine QA

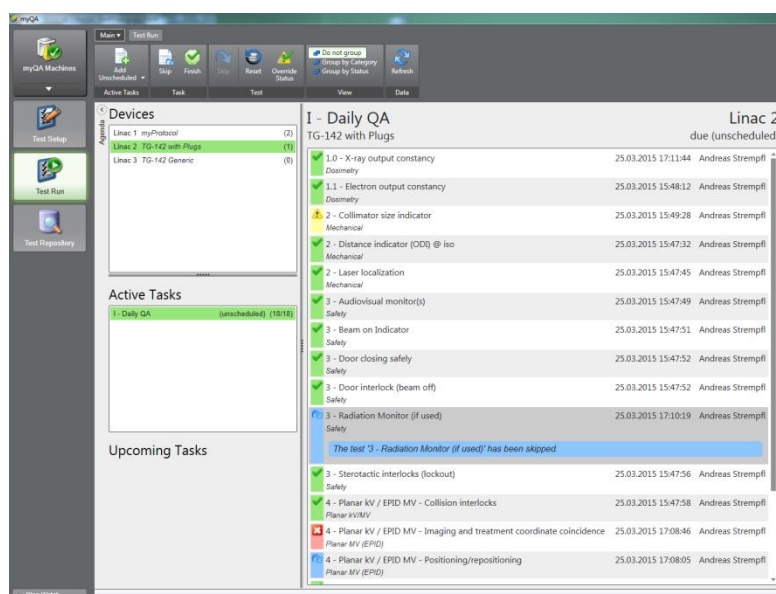
1 Test Setup



2 Test Run



3 Test Archive



For a full description of this myQA module, please refer to the specifications provided under the separate section entitled **“Machine QA”**.

Ordering information (myQA Platform is required)

MQ03-000	myQA Machines
UQ03-000	Upgrade from OmniPro-Advance to myQA Machines
UQ03-200	Upgrade of Siemens MLC QA to myQA Machines

Optional

MQ00-200	myQA FastTrack
MQ00-201	myQA FastTrack for existing OmniPro-I'mRT / Advance installations
MQ03-XXX	Plug-Ins for myQA Machines

Additional Licenses

AQ03-001	Additional license for myQA Machines
AQ03-005	Additional 5 licenses for myQA Machines
AQ03-010	Additional 10 licenses for myQA Machines

Related Detectors

BS80-100	StarTrack including Energy Verification Plates
BS60-500	MatriXX Evolution
BS60-600	MatriXX FFF

Plug-Ins for

Ordering Information

MQ03-100

Dosimetry Plug-In for myQA Machines

Plug-In for **myQA Machines** to perform automated Dosimetry tests with the StarTrack® or MatriXX detectors.



MQ03-200

MLC QA Plug-In for myQA Machines

Plug-In for **myQA Machines** to perform automated MLC stripe tests (also known as "picket fence test").

Additional Licenses

AQ03-201

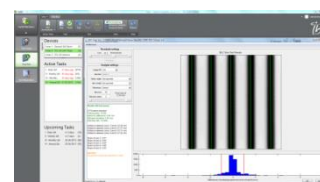
Additional license for myQA machines, MLC QA Plug-In

AQ03-205

Additional 5 licenses for myQA machines, MLC QA Plug-In

AQ03-210

Additional 10 licenses for myQA machines, MLC QA Plug-In



MQ03-300

CBCT QA Plug-In for myQA Machines

Plug-In for **myQA Machines** to perform automated imaging QA for CT and CBCT, among others

Additional Licenses

AQ03-301

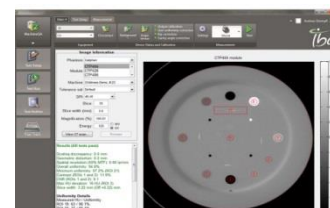
Additional license for myQA machines, CBCT QA Plug-In

AQ03-305

Additional 5 licenses for myQA machines, CBCT QA Plug-In

AQ03-310

Additional 10 licenses for myQA machines, CBCT QA Plug-In



MQ03-400

Planar QA Plug-In for myQA Machines

Plug-In for **myQA Machines** to perform automated imaging QA for planar imaging (kV and MV).

Additional Licenses

AQ03-401

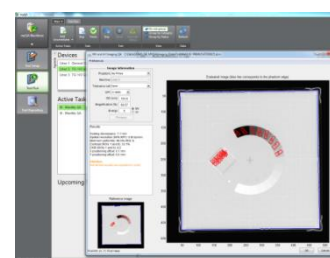
Additional license for myQA Machines, Planar QA Plug-In

AQ03-405

Additional 5 licenses for myQA Machines, Planar QA Plug-In

AQ03-410

Additional 10 licenses for myQA Machines, Planar QA Plug-In



MQ03-500

VMAT & dynamic MLC QA Plug-In for myQA Machines

Plug-In for **myQA Machines** to perform automated dynamic MLC QA.

Additional Licenses

AQ03-501

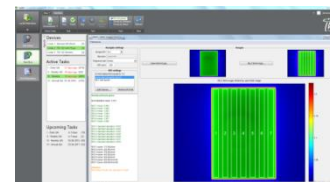
Additional license for myQA Machines, VMAT & dynamic MLC QA Plug-In

AQ03-505

Additional 5 licenses for myQA Machines, VMAT & dynamic MLC QA Plug-In

AQ03-510

Additional 10 licenses for myQA Machines, VMAT & dynamic MLC QA Plug-In

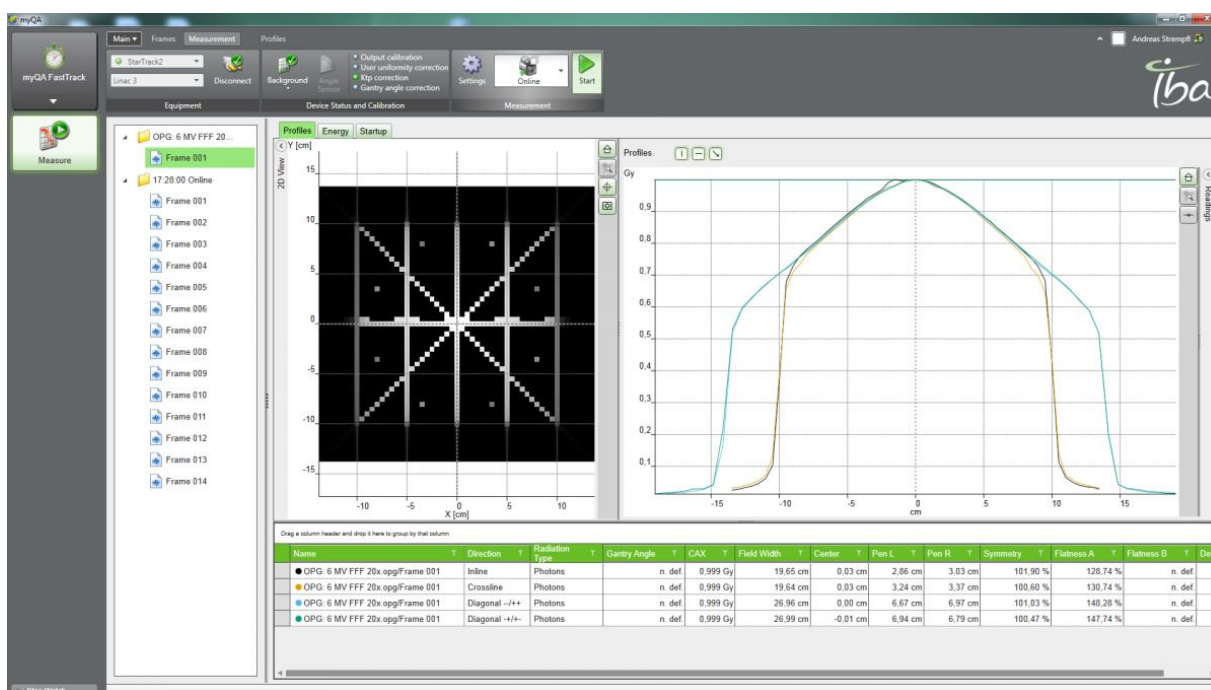


MQ03-600

Iso Check Plug-In for myQA Machines – Automated isocenter tests

myQA FastTrack

Software application for fast measurement and data analysis
with your StarTrack* or MatriXX detector



For a full description of this myQA module, please refer to the specifications provided under the separate section entitled **“Machine QA”**.

Ordering Information (myQA Platform is required)

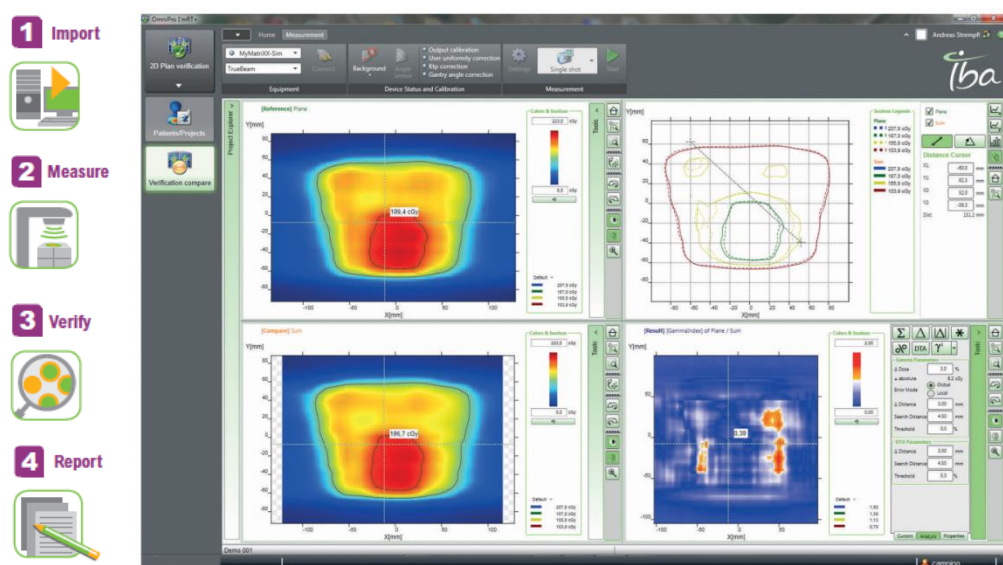
MQ00-200	myQA FastTrack
MQ00-200	myQA FastTrack for existing OmniPro-I'mRT / Advance installations

Related Detectors

BS80-100	StarTrack including Energy Verification Plates
BS60-500	MatriXX Evolution
BS60-600	MatriXX FFF

myQA Patients

Software application for your platform-based plan verification



For a full description of this myQA module, please refer to the specifications provided under the separate section entitled “Plan Verification”.

Ordering Information (myQA Platform is required)

MQ02-000	myQA Patients
UQ02-001	Upgrade from OmniPro-I'mRT 1.x to myQA Patients
UQ02-002	Upgrade from OmniPro-I'mRT+ to myQA Patients
UQ02-010	myQA Patients for COMPASS ^{Pro} user

Optional

MQ01-000	myQA Cockpit
MQ00-200	myQA FastTrack
MQ00-201	myQA FastTrack for existing OmniPro-I'mRT / Advance installations

Additional Licenses

AQ02-001	Additional license for myQA Patients
AQ02-005	Additional 5 licenses for myQA Patients
AQ02-010	Additional 10 licenses for myQA Patients

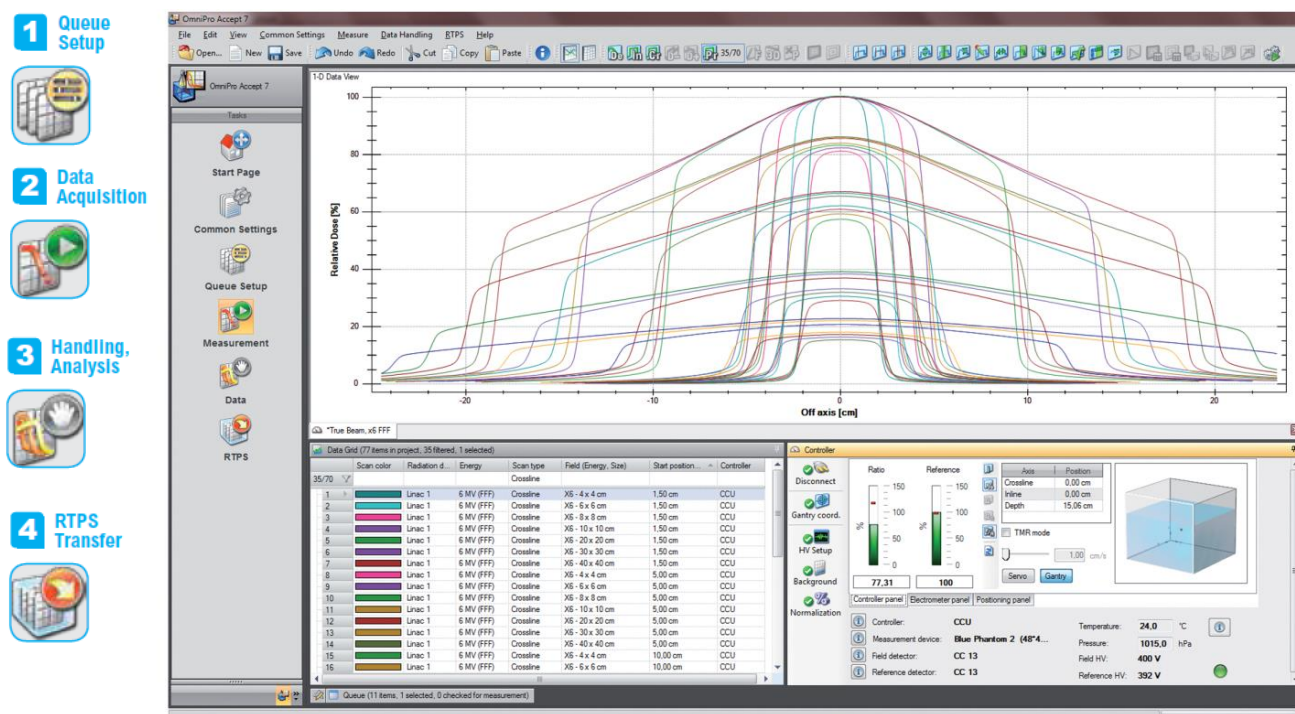
Related Detectors and Accessories

BS60-500	MatriXX Evolution
BS60-600	MatriXX FFF
BS50-000	MultiCube
BS51-000	MultiCube Lite

*Images presented in this document may vary from the actual screen shots of the software. IBA reserves the right to modify the screen layout without prior notice.



Software application for beam commissioning and annual QA



For a full description of this myQA module, please refer to the specifications provided under the separate section entitled “Relative Dosimetry”.

Ordering Information (myQA Platform is required)

MQ04-000	myQA Accept
UQ04-001	Upgrade from OmniPro-Accept 6.x to myQA Accept
<i>Note: Upgrade to CCU is required prior to the Upgrade to myQA Accept</i>	
UQ04-002	Upgrade from OmniPro-Accept 7.x to myQA Accept

Additional Licenses

AQ04-001	Additional license for myQA Accept
AQ04-005	Additional 5 licenses for myQA Accept
AQ04-010	Additional 10 licenses for myQA Accept

Relative Dosimetry

IBA delivers a complete range of solutions and accessories for beam commissioning and annual QA:

Blue Phantom²

The original, based on 40 years of experience!
Gold standard water phantom allowing fastest, most Accurate and most Reliable Linac and TPS commissioning and QA.

Blue Phantom^{COMPACT}

This small footprint 2D water phantom provides the fastest, most accurate, and most reliable scanning innovations based on the leading 3D tank - The Blue Phantom². Its compact design allows for easy transportation, which makes it ideal for annual checks, satellite hospitals, and commissioning service providers.

Blue Phantom^{Helix}

Smaller size tank for periodic quick QA tasks and for **TomoTherapy®** commissioning & QA

Linear Diode Array LDA-99 SC

Five times faster data scanning. Compared to traditional methods, where only one detector measures the dose output of the linear accelerator in a lengthy point-by-point approach, the LDA-99 SC measures an entire dose profile at once; a full 40cm field profile is acquired in less than one second. *(For full details, please refer to the separate section on “**Detectors, Holders and Build-up Caps**”.)*

Stealth^{Chamber} and Razor^{Detector}

Your product range for small field dosimetry for use with any existing IBA water phantom. Perturbation-free "beam invisible" reference signal chamber for relative dosimetry, and high performance diode detector for small field dosimetry. *(For full details, please refer to the separate section on “**Detectors, Holders and Build-up Caps**”.)*

The Blue Phantom water systems are used together with IBA's specially designed and advanced software application:



Advanced acquisition and analysis software that controls the designated devices to measure and verify radiation dose distribution in radiotherapy. It is the new software application that will connect to the **myQA Platform**, enabling the user to benchmark one's data in the cloud, and to use scans as test results or individual reference in their **myQA Machines**. In addition, it allows interface to **myQA Cockpit** for quick and easy access to the measurements and QA results through web browser.

Blue Phantom²

3D Water Phantom System

Advanced 3D Radiation Field Analysis

The original, based on 40 years of experience!

Gold standard water phantom allowing fastest, most accurate and most reliable Linac and TPS commissioning and QA.

Quality beam scanning is the cornerstone for treatment planning and delivery accuracy.

The new Blue Phantom² embodies decades of expertise, research and experience, providing you the best in water phantoms.

➤ 3D Water Phantom Tank

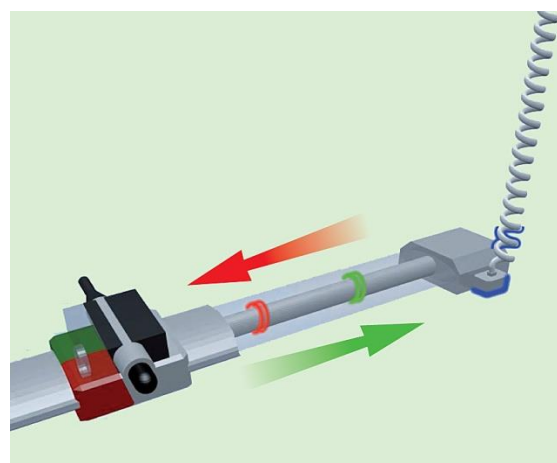
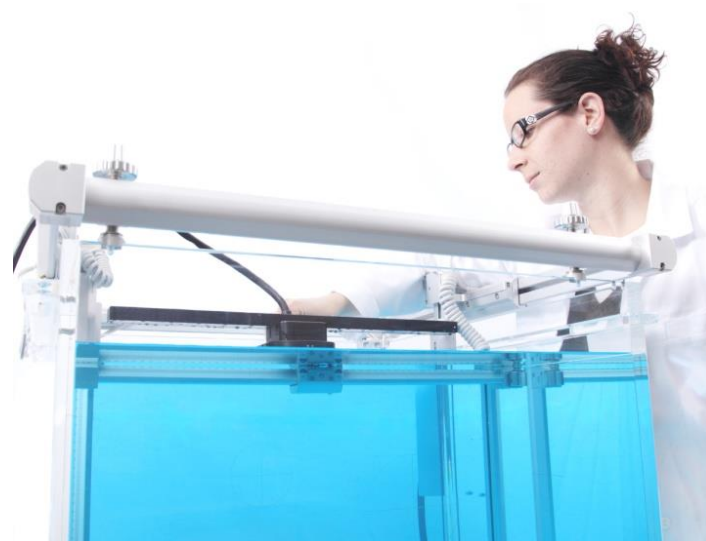
- Water phantom with three-dimensional servo, scanning volume equal to 480x480x410 mm (exterior dimensions: 675x645x560 mm) with crosshairs on all five tank walls for ease of water phantom setup
- Superior magnetostrictive sensor technology for each direction (x, y and z travel) for highest detector positioning accuracy
- High precision detector positioning with advanced horizontal inclination adjustment system
- Small universal detector holder to mount ionization chambers and diode detectors as well as third party detectors with a diameter of 4 mm to 10 mm in vertical and horizontal orientation
- Reference detector holder
- Quick coupling system for connecting / disconnecting the filling hose

➤ Common Control Unit (CCU)

(please refer to next pages for a full description)

➤ Accessories

- Aquablue dilution allowing long-term keeping of the water and longer lifetime of the water tank mechanics
- Alignment cap for field detector
- Operation manual (English Version)
- Storage case and dust cover



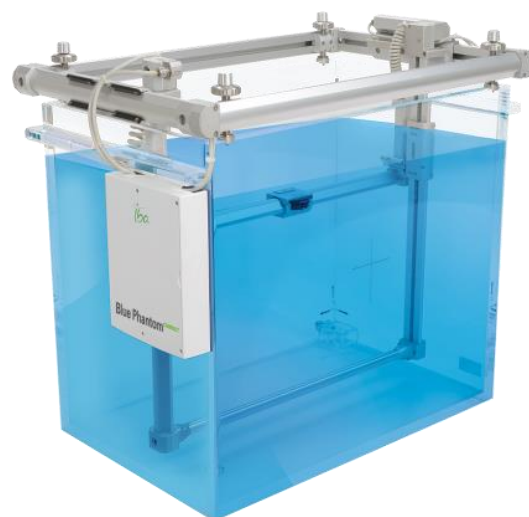
Blue Phantom^{COMPACT}

2D Water Phantom System

Advanced 2D Radiation Field Analysis

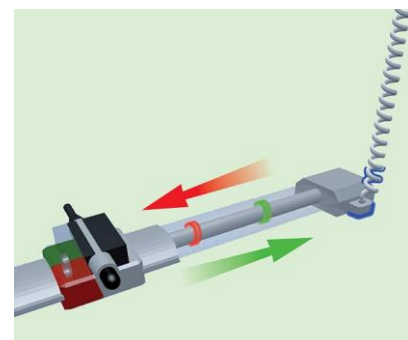
This small footprint 2D water phantom provides the fastest, most accurate, and most reliable scanning innovations based on the leading 3D tank – the Blue Phantom².

Its compact design allows for easy transportation, which makes it ideal for annual checks, satellite hospitals, and commissioning service providers.



➤ 2D Water Phantom Tank

- Water phantom with two-dimensional servo, scanning volume equal to 478 x 4100 mm
- Superior magnetostrictive sensor technology for one direction (x and z travel) for highest detector positioning accuracy
- High precision detector positioning with advanced horizontal inclination adjustment system
- Small universal detector holder to mount ionization chambers and diode detectors as well as third party detectors with a diameter of 4 mm to 10 mm in vertical and horizontal orientation
- Quick coupling system for connecting/disconnecting the filling hose

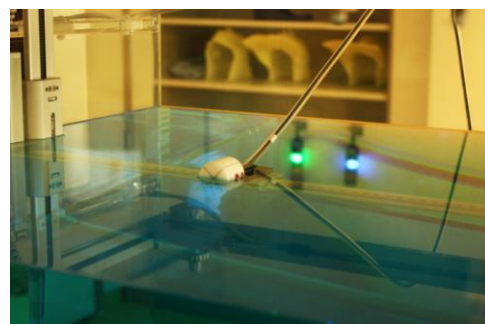
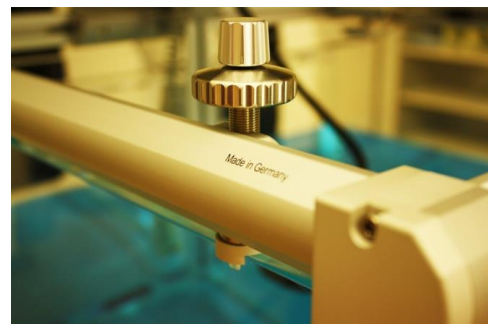


➤ Common Control Unit (CCU)

(please refer to next pages for a full description)

➤ Accessories

- Aquablue dilution allowing long-term keeping of the water and longer lifetime of the water tank mechanics
- Alignment cap for field detector
- Operation manual (English version)
- Storage case and dust cover



Blue Phantom^{Helix}

3D Water Phantom System for Helical Treatment Accelerators

Smaller size tank for **periodic quick QA** tasks
and for **TomoTherapy® commissioning & QA**

➤ 3D Water Phantom Tank

- Water phantom with three-dimensional servo, scanning volume equal to 520 x 140 x 220 mm (In x Cr x Z) (exterior dimensions: 680x407x360 mm (In x Cr x Z)) small size for an easy storage and fast setup (no lift table required)
- Superior magnetostrictive sensor technology for each direction (x, y and z travel) for highest detector positioning accuracy
- Engraved crosshairs on all five tank walls for ease of water phantom setup.
- High precision detector positioning with advanced horizontal inclination adjustment system
- Small universal detector holder to mount ionization chambers with a diameter of 4 mm to 10 mm in horizontal orientation
- Quick coupling system for connecting/disconnecting the filling hose

➤ Common Control Unit (CCU)

(please refer to next pages for a full description)

➤ Accessories

- Alignment cap for field detector
- Operation manual (English version)
- Storage case and dust cover



Recommended Ion Chambers

VD1002103	Ionization Chamber DCT10-RS / TNC Triax Recommended for reference channel measurements with Blue Phantom Helix
DS03-000	CC04 Ion chamber 0.04 ccm, shonka plastic, waterproof, TNC triax 0.04 ccm, shonka plastic, waterproof, TNC triax for stereotactic, IMRT or any small field measurements

Detector Cables

VD1002103	Ionization Chamber DCT10-RS / TNC Triax
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Each complete new package of **Blue Phantom²**, **Blue Phantom^{COMPACT}**, and **Blue Phantom^{HELIX}** includes:

Common Control Unit (CCU)

- Compact unit completely software controlled combining controller and electrometers
 - Two integrated independent electrometers (individual sensitivity, individual high voltage and polarity) for connecting ionization chambers or solid state detectors (diodes) at the same time
 - Integrated controller to control the movement of the field probe inside the water tank.



- TNC triax connectors, floated input by default, grounded input available as an option (Item Number NP10-004, please refer to “*Software Options*” under myQA-Accept software)
- All-in-one hand control equipped with mode buttons to select between water phantom, water reservoir and lift table, and to control their specific functions

(Lifting table with Item Number HA03-000#002 required.
Please refer to section on “*Accessories for Blue Phantom²*”)
- Power supply 100 - 240 V AC +/- 10%; 50/60 Hz
- One 5m control cable for connection of servo to the CCU
- 30m ETHERNET (100Base T) cable for connection of CCU to PC

Notes:

- Two detector cables are required (please refer to the separate section entitled “**Cabling – Triaxial Detector Cables**”).
- OmniPro-Accept version 7.2 is minimum version required
- Computer required. (For minimum computer and database server requirements, please refer to the specifications provided under the separate section entitled “**System Requirements**”).

Water Phantoms for Advanced Radiation Field Analysis

Ordering Information

NP01-000

Note: myQA Accept is not included.

Blue Phantom² 3D Water Phantom System

NP50-000

Blue Phantom^{COMPACT} 2D Water Phantom System

NP50-001

Blue Phantom^{COMPACT} 2D Water Phantom System for existing CCU users

NP90-000

Blue Phantom^{Helix} 3D Water Phantom System for Helical Treatment Accelerators

NP90-001

Blue Phantom^{Helix} for existing CCU users

Includes 3D water phantom tank, and accessories.
Upgrade of Common Control Unit (CCU) and hand control shall be done at the factory.

Note: If the CCU is used in parallel with a Blue Phantom (1st generation) or an RFA-300, an additional control cable for Blue Phantom Helix is required (Article Number E1400620)

CU07-000

Stand Alone Common Control Unit (CCU)
For CCU customers who want to have an extra CCU.
Control cable and Ethernet cable are not included.

Hardware Options

Please note that all hardware options have to be ordered at the same time as the initial purchase of the Blue Phantom system.

NP04-000

Micro Leveling Frame

Calibrated, high precision mechanics with built-in leveling frame for manual horizontal alignment of the scanning mechanism to the water surface in just two (2) minutes.

The scanning mechanism is connected to the tank via four (4) points.

NP03-000

Slanted Bottom

Slanted bottom for complete draining without the need for lifting the tank manually

NP05-000

Thin Window

3mm thin window milled on the tank wall for 90° irradiations.

NP30-000

TPR/TMR measurement set for Blue Phantom²

Please note that the following are required for the TPR/TMR measurement set:

- Water reservoir with bi-directional pump (HA05-000 or HA05-010, see below)
- Reference chamber holder for attachment to the Linac head.
(Please select from the list below.)

Available reference chamber holders for different Linac types:

NP30-101

Small reference chamber holder for attachment to a Siemens Oncor Linac head

NP30-102

Small reference chamber holder for attachment to an Elekta Linac head

NP30-103

Small reference chamber holder for attachment to a Varian Linac head



Accessories for

Blue Phantom²

Blue Phantom^{COMPACT}

and Blue Phantom^{Helix}

Lifting Tables

Ordering Information

HA01-000

Waterphantom carriage, manually operated, including leveling frame



Waterphantom carriage with electrically operated telescopic lift mechanism, including leveling frame



HA03-000#002
HA03-010#002

Power supply 230V
Power supply 115V

Note:

CCU Hand Control application software version 3.0 is the minimum software required.

Water Reservoirs

Ordering Information

HA06-000
HA06-010

Water reservoir carriage with uni-directional pump
(cannot be upgraded for TMR option)

Power supply 230V
Power supply 115V

HA05-000
HA05-010

Water reservoir carriage with bi-directional pump
(prepared for TMR option)

Power supply 230V
Power supply 115V



Note: For use of a water reservoir with Blue Phantom (1st Generation),
RFA-300 or RFA-200 an extra draining pipe is required.

Please select from the list of Draining Pipes provided below:

Draining Pipes

Ordering Information

HA10-000

Draining pipe required for use of HA05/HA06-000
and HA05/HA06-010 with Blue Phantom (1st generation)

HA10-300

Draining pipe required for use of HA05/HA06-000
and HA05/HA06-010 with RFA-300

HA10-200

Draining pipe required for use of HA05/HA06-000
and HA05/HA06-010 with RFA-200

Aquablue Solution

Ordering Information

NP25-000

Aquablue dilution, set of 2 bottles
allowing long-term keeping of the water and longer lifetime of the water tank mechanics

Holders

Please see separate section on “**Detectors, Holders and Build-up Caps**”

myQA Accept

1 Queue Setup



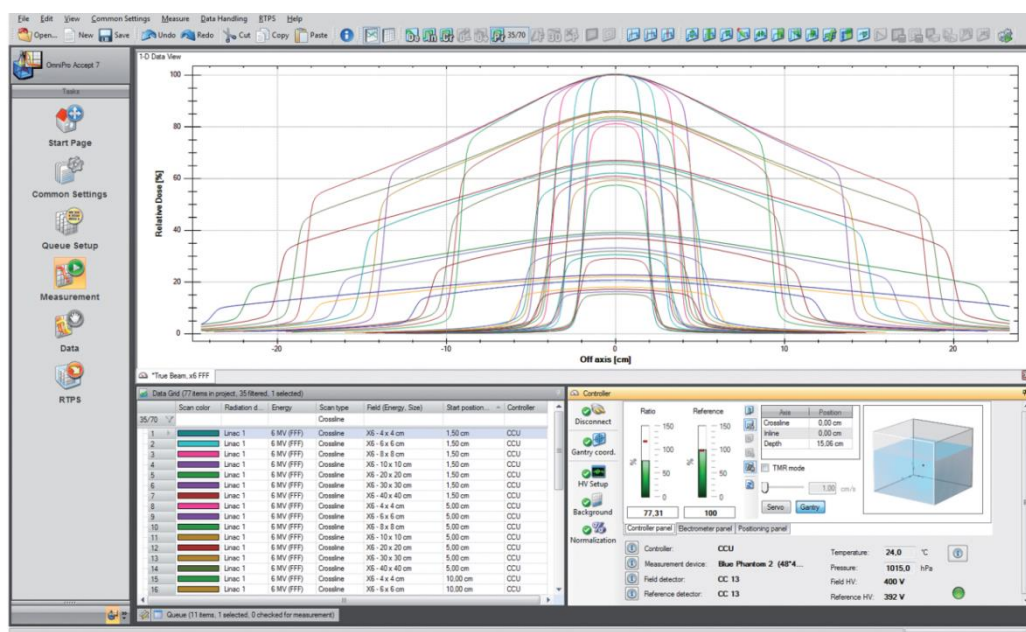
2 Data Acquisition



3 Handling, Analysis



4 RTPS Transfer



NEW

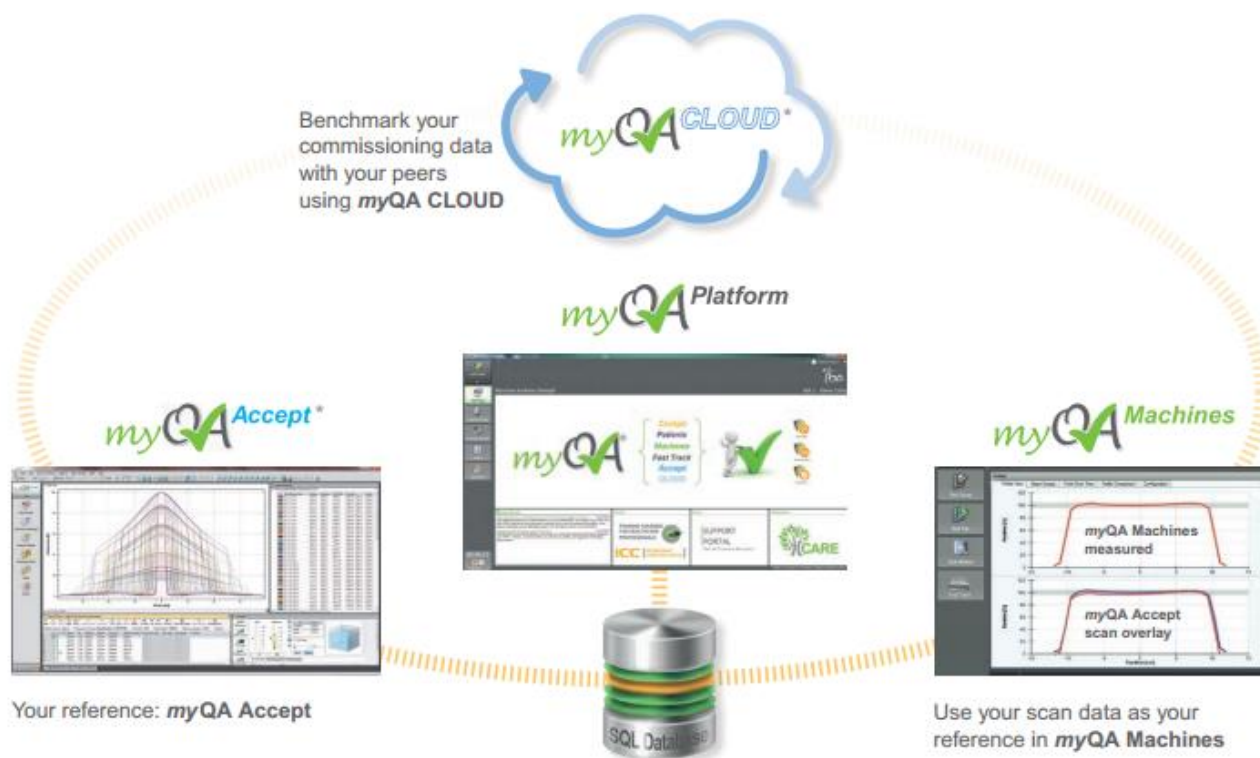
Software application for Beam Commissioning and Annual QA

- Use the power of the Blue Phantom system for establishing your high accuracy profiles
- Easily integrate your profiles e.g. into your **myQA Machines** as a daily reference to your gold standard!
- Flexible and optimized workflow in just 4 steps:
 - Queue set-up
 - Data acquisition
 - Handling analysis
 - RTPS transfer
- Interface to **myQA Cockpit** for quick and easy access to the measurements and QA results through web browser.
- **myQA Cloud** can be used for benchmarking of your QA results for best practice checks, and to connect (anonymously) with peers and data from around the world.

For recommended computer and database server requirements, please refer to the specifications provided under the separate section entitled “System Requirements”.

Your advantage!

Connect your **myQA Accept** software to the **myQA Platform**, **benchmark your data in the cloud** and **use scans as test results or individual reference in your myQA Machines**.



The **myQA Platform** is a computer program hosting interfaces and modules that can be medical devices or non-medical devices as defined by EU guidance document SANCO/BC/03.

It provides access to different applications in order to fulfill machine and/or patient-related quality control activities.

myQA Machines is the software module that provides a complete set of functions to plan, perform, analyze, and document quality assurance of treatment units, imaging devices and their accessories, based on customizable protocols.

For a full description of these as well as of other **myQA** modules, please refer to the separate section on "**myQA – your Global QA Platform**".

Ordering Information (myQA Platform is required)

MQ04-000	myQA Accept
UQ04-001	Upgrade from OmniPro-Accept 6.x to myQA Accept
UQ04-002	Upgrade from OmniPro-Accept 7.x to myQA Accept

Optional

MQ00-200	myQA FastTrack
MQ01-000	myQA Cockpit
MQ00-100	myQA Cloud

Additional Licenses

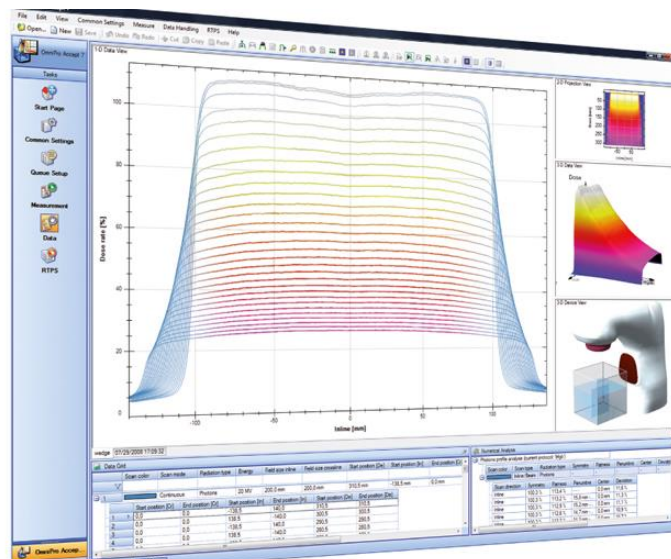
AQ04-001	Additional license for myQA Accept
AQ04-005	5 additional licenses for myQA Accept
AQ04-010	10 additional licenses for myQA Accept



Advanced acquisition and analysis software

myQA Accept is an application software that controls the designated devices to measure and verify radiation dose distribution in radiotherapy. It is also used for analyzing the measured dose distribution for quality assurance, calibration of radiation devices, or as input data to a Treatment Planning System (TPS) for acceptance testing, beam tuning, and research purpose.

The myQA Accept system consists of the myQA Accept software and different supported hardware including water phantoms, air scanners, film scanners/digitizers, and single or array detectors which are produced by IBA Dosimetry GmbH. The myQA Accept system can be configured as the software alone or the software in combination with selected devices for 2D and 3D measurements.



General features:

- Software engine for ultimate efficiency in beam commissioning and QA
- Built on latest Microsoft .NET technology
- Quick set-up
- Easy and flexible queue handling
- Smooth data exchange with myQA and MS Excel
- Support of all international and industry protocols
- Printed manuals, help files, online help & IBA RSS feed.

Common settings:

- Reasonable default parameters as well as flexible customization
- RT Device Manager for fastest equipment setup
- Import & export functionality for easy transfer between different workstations

Queue Set-Up:

- Quick and intuitive generation of measurement queues
- Advanced queue management (load, save, multiple edit, copy-and-paste)
- Filtering and sorting for grouping scans and optimization of queues
- Built-in plausibility checks and queue optimizer show discrepancies prior to measurement.
- Import of RFQ files (queue files) from OmniPro-Accept 6.6c

Data Acquisition:

- 1D, 2D and 3D data views
- Online display of the measurements
- Controller panel for easy connection to the CCU
- Intuitive 1D, 2D and 3D data visualization

Data Analysis:

- Online data analysis for each scan in the data analysis panel
- Electron and photon profiles, depth dose curves and TMR / TPR
- Support of all international and industry protocols
- Calculation and display of Isodose and 2d arrays
- Huge amount of functions for data processing (mathematics, rescale, move, mirror...)
- Change log, Undo / Redo, restore raw data and auto-save function
- Macros to program data processing
- Side-by-side comparison
- Output Factor and Wedge tables
- Flexible ASCII tables including export to MS Excel.

Archiving / Printing:

- Appropriate data archiving
- File Explorer for data mining and data conversion (Accept7, Accept6 and ASC files)
- Various pre-defined print templates and template editor
- Export of print reports to HTML, PDF, RTF or XLS

New!

SDS Gaussian Fit for FFF Profiles – Improved penumbra analysis for FFF profiles using the Gaussian Fit for the slope function to find the point of inflection

New!

Data Export to myQA Platform – Users can now export measured profiles to myQA, for use in myQA Machines as reference data.

Ordering information (myQA Platform required)

MQ04-000	myQA Accept
UQ04-001	Upgrade from OmniPro-Accept 6.x to myQA Accept
UQ04-002	Upgrade from OmniPro-Accept 7.x to myQA Accept

Optional

MQ00-200	myQA FastTrack
MQ01-000	myQA Cockpit
MQ02-100	myQA Cloud

Additional Licenses

AQ04-001	Additional myQA Accept license
AQ04-005	5 additional myQA Accept licenses
AQ04-010	10 additional myQA Accept licenses

RTPS interface Modules for myQA Accept

For specific automatic measurement queue creation and data conversion to one of the following treatment planning systems:

997-120	Varian Eclipse
997-121	Philips Pinnacle
997-122	Nucletron Oncentra Masterplan For air measurements, caps are required (please see items PS11-000, SA76-xxx or 735491, in the separate section entitled "Detectors, Holders, and Build-up Caps")
997-123	CMS XiO/Monaco
997-124	Accuray Multiplan
997-125	TomoTherapy Twin/Me module

SOFTWARE OPTIONS for Blue Phantom²

The Blue Phantom² is the only water phantom customizable to your specific requirements:

- *Select among various premium value adding features*
- *Gain maximum flexibility to configure to your individual needs and budget*
- *Choose from advanced options designed to save time and increase accuracy and flexibility*

MAXIMIZE EFFICIENCY**NP10-003 Selectable electrometer input**

Module enabling the use of grounded input detectors by switching the mode directly in the software (floated input available by default).

The user can use ion chamber or diode/diamond detector.

NP10-005 Advanced Measuring Mode (Continuous Scanning Mode)

Unique continuous scanning mode for the shortest measuring times combined with high spatial resolution of 0.1 mm

Note: Not available for RFA-300.

MAXIMIZE ACCURACY**NP10-006 ASO - Adaptive Scan Optimization**

Unique combination of speed and accuracy to boost data acquisition in step-by-step mode and even speed up continuous measuring mode without compromising accuracy where needed.

Fastest acquisition of profiles and depth dose scans with predefined interval values step size or scanning speed combines most optimal scan measurements with highest number of data points.

NP10-008 CAX- Check

Beam Central Axis position is checked and a possible deviation can be corrected for by the software

INCREASE FLEXIBILITY**NP10-003 Wedge Check**

Wedge factor determination:
Dose ratio on the central axis with the wedge in the beam to the dose under same conditions without the wedge

Wedge angle determination:
Angle between the 50% isodose line and the CAX

NP10-007 Output Factor Table

Measuring and presentation of the radiation output as a function of equivalent fields. The output values are normalized to calibration field size.

The corresponding factors are calculated and stored automatically. Comparison of output factor tables and graphs, and simple export via copy –and– paste for further data processing.

Upgrades for 3D Radiation Field Analysis

Upgrade your efficiency in commissioning and annual QA!

Advancements in Linac technology demand more and more data collection during commissioning. IBA Dosimetry has developed special upgrade packages for existing customers with older Blue Phantom models so that they can continue to take advantage of unique IBA innovations that will help them save time, increase accuracy, and enjoy peace of mind throughout the entire workflow.

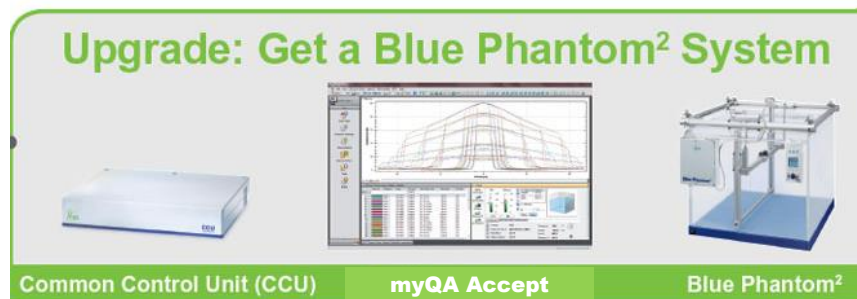
An existing customer with an older Blue Phantom model basically has two options when upgrading their system, and is free to choose which option to take depending on their needs and budget. They may upgrade either (1) the control unit to a CCU, or (2) the whole system (including the water tank) to a Blue Phantom².

IBA customers will benefit from an upgraded system – database security because of the software compatibility with their updated computer operating system, and great enhancements for their commissioning and annual QA work.

myQA Accept and Blue Phantom²

Ultimate Efficiency in Beam Commissioning & Annual QA





Upgrade from existing IBA 3D water phantom to Blue Phantom²

Ordering Information

NU01-000

Water phantom upgrade to Blue Phantom²

Upgrade set includes:

- 3D water phantom tank
- CCU Common Control Unit
- Accessories
- myQA Accept (myQA Platform required)

Please refer to full descriptions under the section “Blue Phantom²” and “myQA Accept”.

Notes:

- The existing control unit (e.g. CU500E or MCU) needs to be returned to the factory.
- Two detector cables are required (please refer to the separate section entitled “**Cabling – Triaxial Detector Cables**”).
- Computer must meet required technical specifications. For minimum computer and database server requirements, please refer to the specifications provided under the separate section entitled “**System Requirements**”.

NU01-500

Upgrade to Blue Phantom² for existing Blue Phantom / RFA-300 users with CCU

Upgrade set includes:

- 3D water phantom tank
- Accessories
- myQA Accept (myQA Platform required)

Please refer to full descriptions under the section “Blue Phantom²” and “myQA Accept”.

Notes:

- The CCU and Hand Control need to be returned to the factory for upgrade.
- Computer must meet required technical specifications. For minimum computer and database server requirements, please refer to the specifications provided under the separate section entitled “**System Requirements**”.



Controller Upgrades to CCU Common Control Unit

Ordering Information

CU06-000

Upgrade from CU500E to CCU for use with Blue Phantom (1st Generation)
for Blue Phantoms with Serial Number starting from 2001-0474 and onwards only.

Upgrade set includes:

- CCU Common Control Unit
- Connector bar for Blue Phantom (1st Generation)
- myQA Accept (myQA Platform required)

Please refer to relevant descriptions under the section “Blue Phantom²” and “myQA Accept”.

Notes:

- The CU500E needs to be returned to the factory.
- Two detector cables are required (please refer to the separate section entitled “Cabling for Relative & Absolute Dosimetry”).
- Depending on the age (Serial Number) of the Blue Phantom, a maintenance service (PU05-100) may be required. For more details, please see the following section.
- Computer must meet required technical specifications. For minimum computer and database server requirements, please refer to the specifications provided under the separate section entitled “System Requirements”.

CU06-001

Upgrade from MCU to CCU for use with RFA-300
for RFA-300 systems with Serial Number starting from DAC100-1019 and onwards only.

Upgrade set includes:

- CCU Common Control Unit
- Control box upgrade for RFA-300
- myQA Accept (myQA Platform required)

Please refer to full descriptions under the section “Blue Phantom²” and “myQA Accept”.

Notes:

- The CCU and Hand Control need to be returned to the factory for upgrade.
- Computer must meet required technical specifications. For minimum computer and database server requirements, please refer to the specifications provided under the separate section entitled “System Requirements”.

Ordering Information

PU05-100

Maintenance of Blue Phantom (1st Generation) to prepare for operation with CCU
for Blue Phantoms with Serial Number starting from 2001-0474 and onwards only.

Maintenance includes:

- parts required to convert the Blue Phantom to the latest technical status
- exchange of worn-out parts
- working time
- final test with CCU

Note:

The Blue Phantom needs to be sent to the factory prepaid.

PU05-400

Maintenance of RFA-300 to prepare for operation with CCU
for RFA-300 systems with Serial Number starting from DAC100-1019 and onwards only.

Maintenance includes:

- parts required to convert the RFA-300 to the latest technical status
- exchange of worn-out parts
- working time
- final test with CCU

Note:

The RFA-300 needs to be sent to the factory prepaid.

Software Upgrades to myQA Accept

Ordering Information

UQ04-001

Upgrade from OmniPro-Accept 6.x to myQA Accept
Only in combination with existing CCU

UQ04-002

Upgrade from OmniPro-Accept 7.x to myQA Accept

Upgrades for RTPS interface Modules

Upgrade from WP700/RFAplus or OmniPro-Accept version 6.x to myQA Accept based RTPS

997-130

Upgrade to myQA Accept RTPS interface Module for Varian Eclipse/Cadplan

997-131

Upgrade to myQA Accept RTPS interface Module for Philips Pinnacle

997-132

Upgrade to myQA Accept RTPS interface Module for Nucletron Oncentra DCM/Masterplan

997-133

Upgrade to myQA Accept RTPS interface Module for CMS XiO

Absolute Dosimetry

Dose²

High-Performance Dual-Channel Reference Class Electrometer

for reference dose and dose rate measurements in Radiation Therapy

The DOSE² is a high-end, reference grade 2-channel electrometer with added chamber library, voltage requirements, read-out capability (dose & dose rate) and triggered (threshold) detection.

Control of the DOSE² is handled by a large, color LCD touchscreen for fast and easy operation, as well as convenient display of many measurement parameters simultaneously.

Highlights:

- High-Performance Dual-Channel
- Reference class dose meter according to IEC60731 with built-in electrical check source.
- Two independent measurement channels
- Independent control of applied system factor, range and bias voltage +/- 1000V
- Wide measurement range for advanced applications
- Threshold triggered measurement mode
- 6.4" color TFT, touchscreen display
- Simple data export via USB

Connector type: TNC triaxial threaded

Power: 100-240 VAC, 0.5 A max,
50/60 Hz input to external power supply, 9 VDC, 1.7 A power supply output to electrometer input, UL/TUL listed power supply



Technical specification:

Performance Characteristics	IEC 60731 Limits	DOSE ²
Resolution		1 fC
Repeatability	+/- 0.25%	+/- 0.1%
Long-term stability	+/- 0.5% Over 1 year	+/- 0.5% (over 1 year)
Zero Drift	+/- 0.5%	+/- 0.25%
Zero Shift	+/- 0.5%	+/- 0.25%
Non-Linearity	+/- 0.5 %	+/- 0.25%
Response Time	< 3 sec	< 2 sec on high range < 12 sec on low range
Stabilization Time	+/- 0.5% Min Rated Range = 15 min to 6 hr	+/- 0.1%
Range Changing	+/- 0.5%	+/- 0.25%
Dose Rate Dependence	+/- 0.5%	< 0.5%

Ordering Information

DA28-000	DOSE 2 Dual Channel Reference Class Therapy Dose Meter
M1902701	Carrying case for DOSE 2 and accessories

Dose 1

High Performance Reference Class Electrometer

The therapy dose meter *DOSE 1* is a reference class dose meter according to IEC731 with built-in electrical check source.

It includes the Dose 1 measurement software.

➤ Technical specification:

- Polarization voltage:
± 600V, programmable in steps of 1V
- Leakage check:
of sensor as well as extensions cable by means of a unique built-in device
- Sensors: Ion chambers, semiconductor and diamond probes
- User Interface:
 - Large back-lit graphic EL display, 320 x 240 pixels
 - Highly flexible softkey interface
 - Enhanced sensor library, extendible to 40 entries by the user, via PC
 - Library of 40 user definable calibration factors
 - Simultaneous readout of charge, current, exposure and exposure rate
- Software update:
From PC, via RS232 serial interface
- PC interface: RS232 serial interface
- Service: Easy exchangeable, factory calibrated modules with built-in test routines
- Power supply: 100 - 240V, 50/60hz, one power cord included for either 230V power plug, USA, UK, Australia or China



➤ Dose 1 measurement software:

- Connection to Dose 1 via RS232
- Manual and automated measurements
- Specific measurement queue generation
- Export to Excel and XML files
- License for installation on one workstation

Ordering Information

DA20-000	DOSE 1 Reference Class Therapy Dose Meter Connector type: TNC triaxial threaded
DA20-300	DOSE 1 Reference Class Therapy Dose Meter <u>with battery pack</u> Battery: 4 D-type batteries or rechargeable Ni-Cd accumulators
DA21-000	DOSE 1 Reference Class Therapy Dose Meter, convertible For use with different connector cables/adapters, as listed in item numbers DA22-000 - DA25-000.
DA21-300	DOSE 1 Reference Class Therapy Dose Meter, convertible <u>with battery pack</u> For use with different connector cables/adapters, as listed in item numbers DA22-000 to DA25-000.
910-000	DOSE 1 Measurement Software for existing Dose1 users License for installation on one workstation
M1902700	Carrying case for DOSE 1 and accessories

Connecting cables / adapters for Dose 1 Convertible

Ordering Information

DA22-000	TNC triaxial threaded
DA24-000	M-connector PTW
DA25-000	BNC-coaxial/banana
EB908000	TNC triax - BNC triax Adapter
DS10-018	Triaxial ion chamber cable (low noise), 18 m on cable reel, TNC triax connector (for Dose 1 standard and convertible)

Accessories

Ordering Information

2120-000	Digital Barometer Measuring range: 750 - 1100 hPa Precision: +/- 0.5 hPa at 25° C, +/- 1.0 hPa for 0°C<T<50°C Resolution: 0.01 hPa
3120-000	Laboratory Thermometer Includes sensor PT100 Measurement range: -200°C ... +500°C Resolution: +/- 0.01°C (-100°C ... +200°C), otherwise +/- 0.1°C Precision: +/- 0.1% in the range of -100°C ...+200°C otherwise +/- 0.2%
5120-100	C210 Thermo-Hygrometer with flexible probe Measuring ranges: Temperature: -20°C ... +50°C. Relative Humidity: 0 ... 98% Relative Humidity Accuracy: Temperature: ±0,3°C (0 ... 40°C) otherwise ±0,5°C +1digit. Relative Humidity ±2% RH +1digit



Radioactive Stability Check Devices



Radioactive Check Device, type CDC for Cylindrical Detectors

Ordering Information

CD10-000	<p>Radioactive Check Device type CDC for cylindrical detectors</p> <p>⁹⁰Sr radionuclide, 30 MBq +/- 10% activity Dose rate at 10 cm distance (cover closed): < 1μSv/h UN No. 2910 ; ISO Classification: C 6X444</p> <p><u>Adapters and thermometer for CDC Device:</u></p>
CD11-000	<p>Adapter for use of "Farmer" type chambers with CDC radioactive check device for FC65-P, FC65-G, FC23-C</p>
CD12-000	<p>Adapter for use of CC type chambers with CDC radioactive check device for CC08, CC13, CC25 chambers</p>
CD30-000	<p>Thermometer for CDC radioactive check device</p> <p>Mercury thermometer with customized housing especially for measurements inside the CDC shielding container.</p> <p>Range: -10° to 50° C; Resolution: 0.1° C; Accuracy: +/- 0.3° C</p>

Radioactive Check Device, type CDP for Parallel Plate Detectors

Ordering Information

CD20-000	<p>Radioactive Check Device type CDC for parallel plate detectors</p> <p>⁹⁰Sr radionuclide, 30 MBq +/- 10% activity Dose rate at 10 cm distance (cover closed): < 1μSv/h UN No. 2910 ; ISO Classification: C 6X444</p> <p><u>Adapters for CDP Device:</u></p>
CD21-000	<p>Adapter for use of PPC05 with CDP radioactive check device</p>
CD22-000	<p>Adapter for use of PPC40 with CDP radioactive check device</p>
CD23-000	<p>Adapter for use of NACP and PTW Markus chamber with CDP radioactive check device</p>



Note:

Please observe the local safety regulations regarding radiation protection, use, transport, import, export and disposal of such devices.

WP1D

1D Water Phantom for Absolute Dosimetry

according to
all existing protocols

One dimensional, stand-alone waterphantom for absolute dose measurements according to TG-51 (lead filter option needed) and IAEA TRS-398 protocols.

Tank size: 34 x 40 x 35 cm³ (inner diameter)
36 x 42 x 36 cm³ (outer diameter)

Wall material: Acrylic plastic (PMMA)



Wall thickness:	10 mm
Maximum scan range:	25 cm
Position resolution:	0.1 mm
Position reproducibility:	± 0.1 mm
Horizontal levelling:	levelling screws at three points

Ordering Information

DA01-000

WP1D Manual Water Phantom

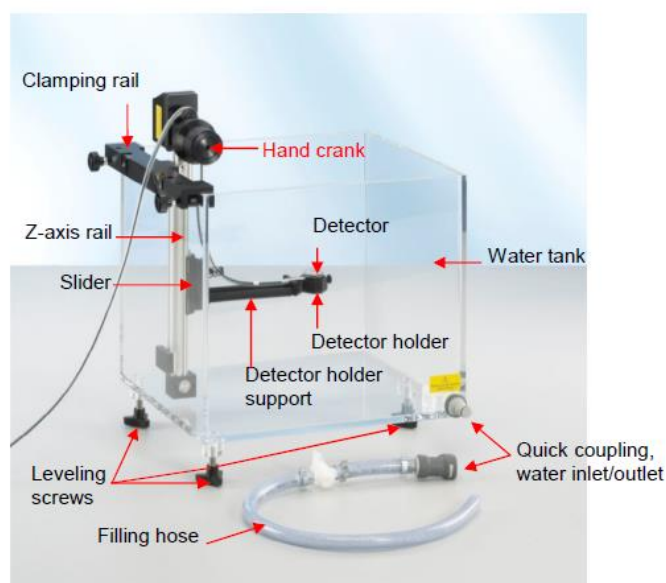
The measurement depth can be manually adjusted and read out on the incremental encoder with integrated display.

Different detector holders for cylindrical and parallel plate chambers are available (see options).

Includes storage case.

Mechanical drift:
Negligible due to self-locking hand crank

Weight:
11 kg

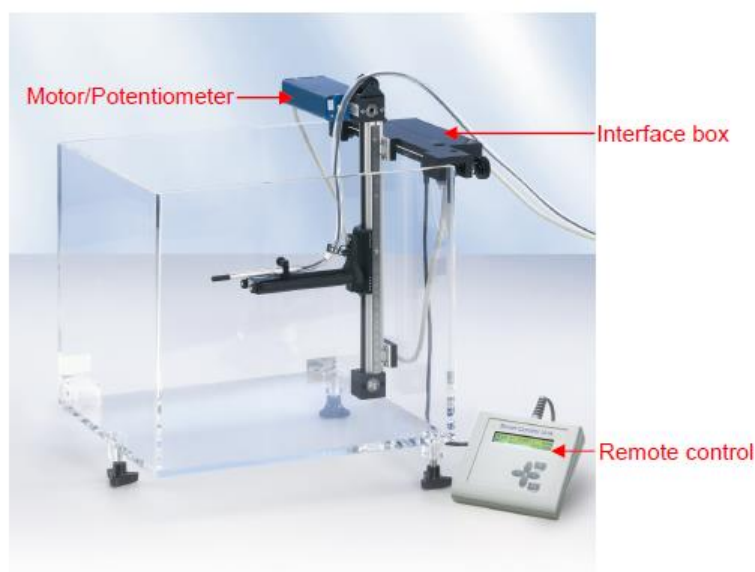


The Manual control version (red text: item only for manual version; black text: items for other versions, this picture only)

Ordering Information

DA02-000

WP1D Motorized Water Phantom including Smart Control Unit (SCU)



The WP1D Phantom, SCU version (The motor control unit is not in the photo.)

The measurement depth can be adjusted in steps of 0.1-100 mm with the SCU.

Up to 8 data sets (e.g. Linacs) with each 62 measurement depths can be preset and stored in the SCU.

The SCU can be operated from both the treatment room as well as the control room for convenient remote adjustment of the different measurement depths.

Includes 20m cable and storage case.

SCU display: Alphanumeric display 2 x 20 characters, back illuminated

SCU cable length: 20 m

Power supply: 110 - 240 V, 50/60 Hz, one power cord included for either 230 V power plug, USA, UK, Australia or China

Weight: 12 kg

Ordering Information

DA03-000

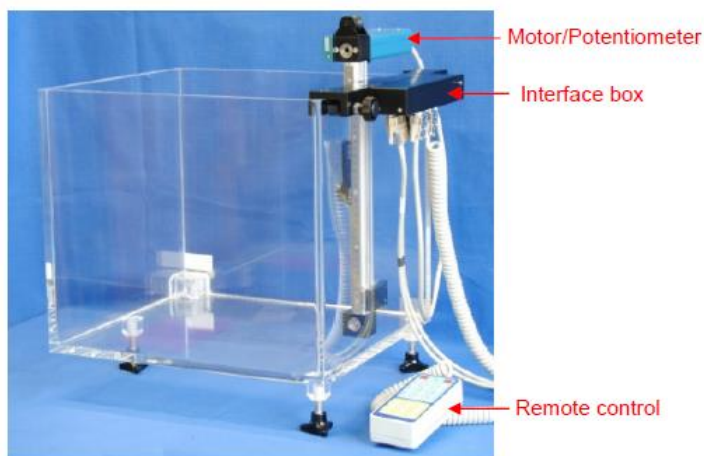
WP1D Motorized Water Phantom with interface to CU500E

The WP1D motorized water phantom is connected to the CU500E for motorized adjustment of the measurement depth to enable both depth scans for beam characterization as well as discrete individual positioning of the detector for measurements at the reference depths.

This requires that the user has a 3D water phantom operating with CU500E/CU500 and OmniPro-Accept version 6.1 or higher available.

Includes reference holder and storage case.

Weight: 11 kg (without the CU500E)



DA04-000

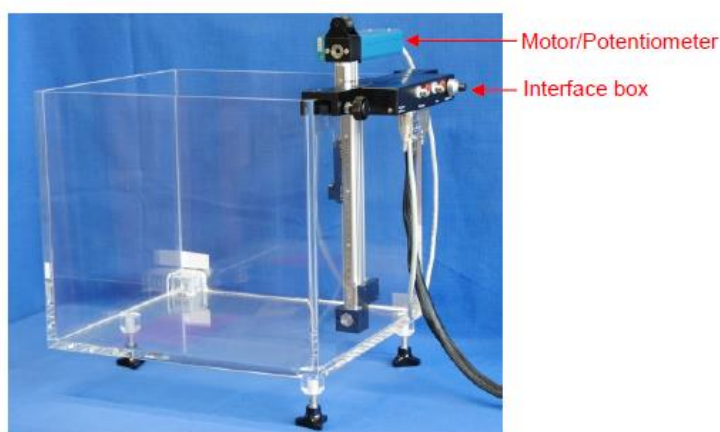
WP1D Motorized Water Phantom with interface to MCU

The WP1D motorized water phantom is connected to the MCU for motorized adjustment of the measurement depth to enable both depth scans for beam characterization as well as discrete individual positioning of the detector for measurements at the reference depths.

This requires that the user has a 3D water phantom type RFA-300 operating with MCU and OmniPro-Accept version 6.1 or higher available.

Includes reference holder and storage case.

Weight: 11 kg (without the MCU)





WP1D Upgrades

Ordering Information

DA11-100	Upgrade of WP1D manual waterphantom to motorized waterphantom with SCU Including: <ul style="list-style-type: none"> Power supply: 100 - 240V, 50/60 Hz, one power cord included for either 230V power plug, USA, UK, Australia or China Motorized linear drive
DA12-200	Upgrade of WP1D motorized waterphantom with Smart Control Unit to motorized version with interface to CU500E Including: <ul style="list-style-type: none"> Interface box to connect waterphantom to CU500E Reference chamber holder for CC chambers
DA12-300	Upgrade of WP1D motorized waterphantom with Smart Control Unit to motorized version with interface to MCU Including: <ul style="list-style-type: none"> Interface box to connect waterphantom to MCU Reference chamber holder
DA16-000#001	Kit for conversion of WP1D motorized waterphantom with SCU, CU500E and MCU to manual version Including: <ul style="list-style-type: none"> Complete mechanics of manual WP1D

Options for WP1D

Ordering Information

DA08-000	Three point levelling plate made of reinforced epoxy.		
DA05-000	Lead filter for photon beam quality determination above 10 MV according to TG-51 protocol, 30 cm tripot		
DA05-100	Lead filter for photon beam quality determination above 10 MV according to TG-51 protocol, 50 cm tripot		
DA06-005	Extension cable, 5 m length, for WP1D with Smart Control Unit (SCU) to connect to 20 m cable		
DA06-010	Extension cable, 10 m length, for WP1D with Smart Control Unit (SCU) to connect to 20 m cable		
DA06-020	Extra extension cable, 20 m length, for WP1D with Smart Control Unit (SCU)		

Detector Holders for WP1D

Ordering Information

DA07-100

Detector holder for use of FC "Farmer type" detectors with WP1D



Note: Not applicable for WP1D motorized version with MCU.

DA07-200

Detector holder for use of NE Farmer chamber type 2571/ 2581 with WP1D

DA07-300

Detector holder for use of PPC05, NACP and PTW Markus type detector with WP1D

DA07-400

Detector holder for use of PPC40 detector with WP1D



DA07-500

Detector holder for use of CC type detectors with WP1D



DA07-600

Detector holder for use of EFD 3^G-pSi diode field detector for electrons with WP1D



DA07-800

Detector holder for use of Exradin chamber, diameter 6-10 mm with WP1D

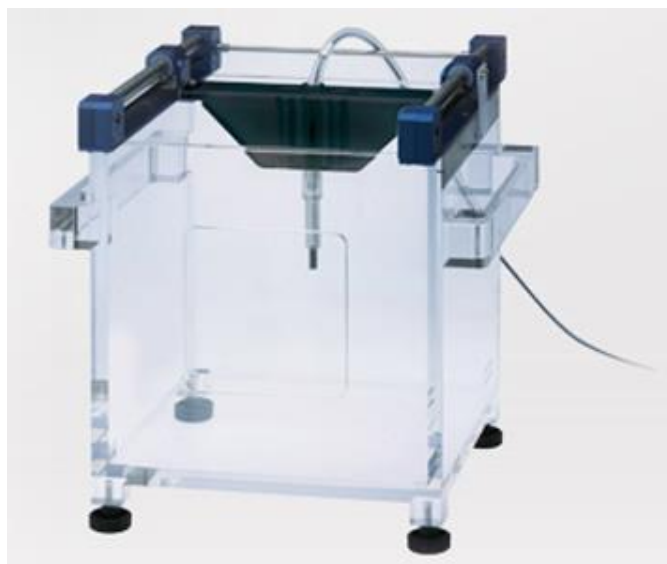
DA07-900

Detector holder for use of Exradin chamber, diameter 10-13 mm with WP1D

WP34

1D Water Phantom for Absolute Dosimetry Calibration

with horizontal beam incidence



The WP34 Phantom is designed for absolute dose measurements in radiation beams with horizontal beam incidence.

Furthermore, it is suitable for the calibration of ionization chambers used in radiation therapy.

The phantom design allows cross calibration of a field ionisation chamber against a calibrated reference chamber at the user facility.

- Open top, acrylic waterphantom according to ICRU report 48.
- Continuously variable fine depth adjustment using calibrated scales.
- Includes storage case.

Ordering Information

DA49-000 **WP34** Advanced dosimetric and calibration waterphantom for horizontal beams

Technical specifications:

Reference medium for absorbed dose:	Water
Measuring depth:	18-250 mm (cylindrical chambers) 8 (resp. 12) - 250 mm (parallel plate chambers, depending on chamber type)
Adjustment of depth:	continuously variable
Radiation incidence:	horizontal beam
Energy range:	60 Co, 15-50 MV, 10-25 MeV
Wall thickness of entrance windows:	4 mm nominal +/- 0.22 mm
Phantom material:	PMMA
Exterior dimensions:	410 x 326 x 370 mm ³
Interior dimensions:	300 x 300 x 300 mm ³
Net weight:	10 kg

Adapters for WP34

Ordering Information

Adapters for CC-type chambers

DA41-000 Adapter for CC01

DA42-000 Adapter for CC13



Adapters for Farmer-type chambers

DA44-000 Adapter for FC65-P or FC65-G "Farmer" type

DA45-000 Adapter for FC23-C



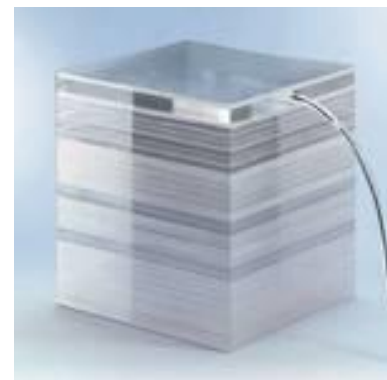
DA47-000 Adapter for PPC05 or NACP chamber



DA48-000 Adapter for PPC40 parallel type



Solid Phantoms for Absolute Dosimetry



Standard SP22 Calibration Phantom

Ordering Information

DA50-000	SP22 PMMA Solid calibration phantom Dimensions: 200 x 200 x 120 mm; measuring depth 50, 70 and 100 mm
DA52-000	Adapter for CC13
DA54-000	Adapter for FC65-P or FC65-G "Farmer" type
DA55-000	Adapter for FC23-C

SP33 PMMA Plate Phantom

Ordering Information

DA60-000	SP33 PMMA Plate phantom , consisting of 33 PMMA plates including storage case Dimensions: 300 x 300 mm and 33 plates (29x10 mm, 1x5 mm, 2x2 mm, 1x1 mm thickness) PMMA density value: 1.18 g/ccm
	<u>Adapter Plates for SP33 Phantom</u>
DA61-000	PMMA Adapter plate for CC01
DA62-000	PMMA Adapter plate for CC13
DA62-900	PMMA Adapter plate for RK
DA63-000	PMMA adapter plate for CC04
DA64-000	PMMA Adapter plate for FC65-P/FC65-G "Farmer" type, PTW 30010/30012 and NE 2571/2581
DA64-100	PMMA Adapter plate for Capintec PR06 ion chamber
DA65-000	PMMA Adapter plate for FC23-C
DA66-000	PMMA Adapter plate for PPC05 or PTW "Markus" type ion chamber
DA67-000	PMMA Adapter plate for PPC40
DA68-000	PMMA Adapter plate for FeSO4 dosimeter
DA69-000	PMMA Adapter plate for NACP chamber
DA95-000	PMMA Adapter plate for PTW 31003/31013 chamber
DA95-100	PMMA Adapter plate for PTW 23342 soft X-ray chamber
DA96-000	PMMA Adapter plate for Exradin A10 chamber
DA96-100	PMMA Adapter plate for Exradin A12 chamber
DA96-200	PMMA Adapter plate for Exradin A14 chamber

Ordering Information

Single Plates for SP33 Phantom	
DA80-000	PMMA plate, 1 mm thickness
DA81-000	PMMA plate, 2 mm thickness
DA82-000	PMMA plate, 5 mm thickness
DA83-000	PMMA plate, 10 mm thickness
DA84-000	PMMA plate, 20 mm thickness
DA85-000	PMMA plate, 50 mm thickness

SP34 RW3 Plate Phantom

Ordering Information

DA70-000

SP34 300 x 300 mm RW3 Plate phantom,
consisting of 33 RW3 plates including storage case

The SP34 phantom is designed for quality assurance of absolute and relative dose measurements in photon and electron beams with Farmer type chambers, Parallel Plate Chambers, or Compact Chambers. Beam incidence is vertical.

The SP34 is a solid water-equivalent phantom for quality assurance measurements.

The solid phantom material RW3 is a white polystyrene, containing 2.1 % titanium oxide (TiO₂). The absorption of RW3 is very similar to that of natural water.

Dimensions: 300 x 300 mm and 33 plates
(29x10 mm, 1x5 mm, 2x2 mm, 1x1 mm thickness)

RW3 density value: 1.045 g/ccm



The SP34 is delivered with 33 plates in a shipping container.

Number of plates	Thickness
29	10 mm
1	5 mm
2	2 mm
1	1 mm



Adapter Plates for 300 x 300mm SP34 Phantom

DA71-000	RW3 Adapter plate for CC01
DA71-900	RW3 Adapter plate for CC25
DA72-000	PMMA Adapter plate for RK
DA72-900	RW3 Adapter plate for RK chamber
DA72-100	RW3 Adapter plate for CC13-S
DA73-000	RW3 adapter plate for CC04
DA74-000	RW3 Adapter plate for FC65-P/FC65-G "Farmer" type, PTW 30010/30012 and NE 2571/2581
DA74-100	RW3 Adapter plate for Capintec PR06 ion chamber
DA75-000	RW3 Adapter plate for FC23-C
DA76-000	RW3 Adapter plate for PPC05 or PTW "Markus" type ion chamber
DA77-000	RW3 Adapter plate for PPC40
DA77-900	RW3 Adapter plate for PTW Roos chamber
DA78-000	RW3 Adapter plate for FeSO ₄ dosimeter
DA79-000	RW3 Adapter plate for NACP chamber
DA90-000	RW3 Adapter plate for PTW 31003/31013 chamber
DA91-000	RW3 Adapter plate for Exradin A10 chamber
DA91-100	RW3 Adapter plate for Exradin A12 chamber
DA91-200	RW3 Adapter plate for Exradin A14 chamber

Single Plates for 300 x 300mm SP34 Phantom

DA86-000	RW3 plate, 1 mm thickness
DA87-000	RW3 plate, 2 mm thickness
DA88-000	RW3 plate, 5 mm thickness
DA89-000	RW3 plate, 10 mm thickness

DA70-400	<u>SP34 400 x 400 mm RW3 Plate phantom,</u> consisting of 33 RW3 plates including storage case Dimensions: 400 x 400 mm and 33 plates (29x10 mm, 1x5 mm, 2x2 mm, 1x1 mm thickness) RW3 density value: 1.045 g/ccm
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Adapter Plates for 40 x 40cm SP34 Phantom

DA71-400	RW3 Adapter plate for CC01, 40 x 40 cm
DA71-940	RW3 Adapter plate for CC25, 40 x 40 cm
DA72-400	RW3 Adapter plate for CC13, 40 x 40 cm
DA73-400	RW3 adapter plate for CC04, 40 x 40 cm
DA74-400	RW3 Adapter plate for FC65-P/FC65-G "Farmer" type, PTW 30010/30012 and NE 2571/2581, 40 x 40 cm
DA75-400	RW3 Adapter plate for FC23-C, 40 x 40 cm
DA76-400	RW3 Adapter plate for PPC05 or PTW "Markus" type ion chamber, 40 x 40 cm
DA77-400	RW3 Adapter plate for PPC40, 40 x 40 cm
DA79-400	RW3 Adapter plate for NACP chamber, 40 x 40 cm

Detectors, Holders, and Build-up Caps

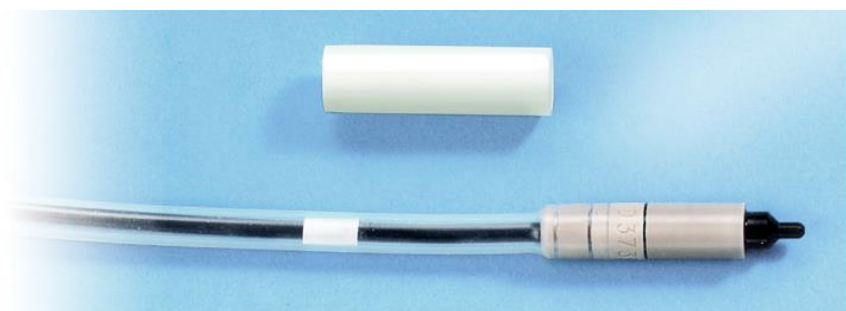
Ionization Chambers

Ionization chambers to be used with CCU and with Dose 1

Ordering Information

Compact Thimble Ion Chambers

CC01



Ion chamber: 0.01 ccm, for stereotactic, IMRT and any small field measurements, TNC triax - not recommended for use in absolute dosimetry due to small volume.

DS05-000
DS05-100

CC01 - TNC Triax Connector
CC01 - BNC Triax Connector

CC04



Ion chamber: 0.04 ccm, shonka plastic, waterproof, for stereotactic, IMRT or any small field measurements

DS03-000
DS03-100

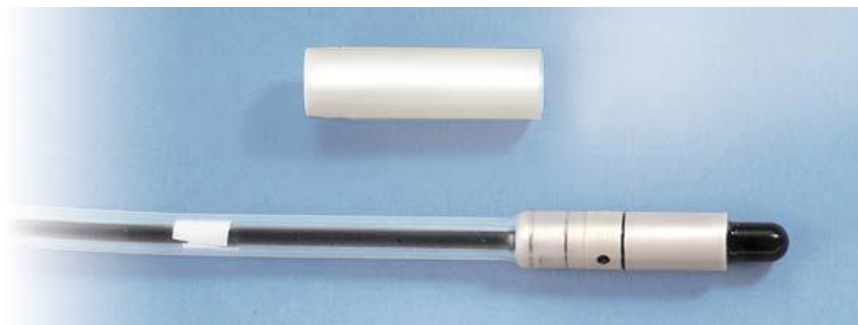
CC04 - TNC Triax Connector
CC04 - BNC Triax Connector

Note: For use in a 3D Water Phantom controlled by the CCU, it is recommended to use the same ionization chamber type for the field and for the reference channels, or the Stealth CHAMBER as reference chamber, to optimize the signal to noise ratio. It is therefore recommended to purchase the detectors in pairs, especially for the small volume chambers like CC01 or CC04.

Detectors, Holders and Build-up Caps

Ordering Information

CC08



Ion chamber: 0.08 ccm, shonka plastic, waterproof

DS21-000
DS21-100

CC08 - TNC Triax Connector
CC08 - BNC Triax Connector

CC13



Ion chamber: 0.13 ccm, shonka plastic, waterproof

DS02-000
DS02-100

CC13 - TNC Triax Connector
CC13 - BNC Triax Connector

CC25



Ion chamber: 0.25 ccm, shonka plastic, waterproof

DS22-000
DS22-100

CC25 - TNC Triax Connector
CC25 - BNC Triax Connector

Ordering Information

"Farmer"- type Ion Chambers for Photon Beams

FC65-P

"Farmer" type ion chamber: 0.65 ccm, POM, waterproof



The Farmer type chamber FC65-P is an air cavity ionization chamber, vented through a waterproof silicon sleeve. It is waterproof and fully guarded.

The watertight chamber consists of a conducting plastic thimble outer electrode and a pure aluminum inner electrode, which are supported by a thin aluminum stem. The stem is connected to a 1.40-m cable shielded by a watertight silicon sleeve that allows for air ventilation.

The chamber is designed preferably for the energy ranges of photons and electrons at medical accelerators. It can also be employed in X-ray beams with generating potentials from 70 kV to 280 kV and for gamma radiation of ^{137}Cs and ^{60}Co . The energy range of proton beams with available chamber factors is between 50 and 250 MeV.

DS24-000
DS24-100

FC65-P - TNC Triax Connector
FC65-P - BNC Triax Connector

Ordering Information

FC65-G

"Farmer" type ion chamber: 0.65 ccm, graphite wall, waterproof



The FC65-G is an air ionization chamber, vented through a waterproof silicon sleeve. It is waterproof and fully guarded.

The chamber is designed preferably for the energy ranges of photons and electrons at medical accelerators. It can also be employed in X-ray beams with generating potentials from 70 kV to 280 kV and for gamma radiation of ^{137}Cs and ^{60}Co . The energy range of proton beams with available chamber factors is between 50 and 250 MeV.

DS04-000
DS04-100

FC65-G - TNC Triax Connector
FC65-G - BNC Triax Connector

FC23-C

"Farmer" type ion chamber : 0.23 ccm, shonka plastic, waterproof



The Farmer type chamber FC23-C is an air cavity ionization chamber, vented through a waterproof silicon sleeve. It is waterproof and fully guarded.

The watertight chamber consists of conducting plastic outer and inner electrodes, supported by a thin aluminum stem. The stem is connected to a 1.40-m cable shielded by a watertight silicon sleeve that allows for air ventilation.

The chamber is designed preferably for the energy ranges of photons and electrons at medical accelerators. It can also be employed in X-ray beams with generating potentials from 70 kV to 280 kV and for gamma radiation of ^{137}Cs and ^{60}Co . The energy range of proton beams with available chamber factors is between 50 and 250 MeV.

DS23-000
DS23-100

FC23-C - TNC Triax Connector
FC23-C - BNC Triax Connector

Ordering Information

Parallel Plate Ion Chambers for Electron Beams

PPC05

Parallel plate chamber for electron beams, 0.05 ccm.

Suitable for all phantom cut-outs and holders originally designed for the "Markus" chamber.



PPC05 is an air-cavity ionization chamber with high spatial resolution.

The construction materials are air equivalent conducting plastic Shonka C552 (housing, entry window and side walls) and highly insulating plastics PEEK and PPE. The collecting electrode material is graphitized PEEK.

The chamber is constructed with a circular sensitive volume of planar geometry covered by a rigid 1 mm thick entry window. The small collecting volume with 0.6 mm plate spacing, 9.9 mm diameter and a 3.4-mm-wide guard ring enables excellent resolution in depth dose studies and requires a small perturbation correction.

The chamber is waterproof and vented through a silicone sleeve.

DS30-000
DS30-100

PPC05 - TNC Triax Connector

PPC05 - BNC Triax Connector

PPC40

Parallel plate ion chamber for electron beams, 0.4 ccm

As designed and constructed by PTB Braunschweig, M. Roos, K. Derikum, D. Lange.



The chamber is entirely made from PMMA; electrode areas are additionally graphitized.

Ordering Information

DS31-000
DS31-100

The waterproof chamber is vented through a silicone sleeve and it is constructed with a circular sensitive volume of planar geometry covered by a rigid 1 mm thick front window.

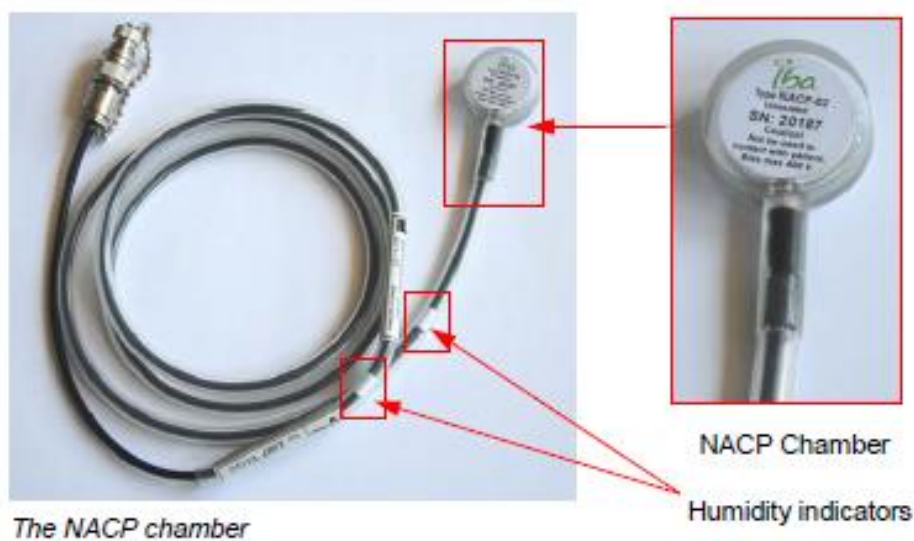
The combination of design and material minimizes perturbation components, the in-scattering and the backscatter effect, to a perturbation correction factor equal to unity.

As an associated measuring instrument for precise absolute dose determinations, in calibration dosimetry, compliance testing or installation and set-up of treatment machines or other new equipment, it is recommended to use the reference-class therapy dosimeter Dose1 or Dose2.

PPC40 - TNC Triax Connector
PPC40 - BNC Triax Connector

NACP

Parallel plate ionization chamber, 0.16 cm



The NACP Chamber is designed according to the recommendations of the Nordic Association of Clinical Physicists (NACP).

The collecting electrode is manufactured of graphitized polystyrene. The Parallel Plate NACP Chamber is produced by IBA Dosimetry, Germany.

The major part of NACP chamber cable is surrounded by a transparent and water-proof plastic tube to protect from water and ensure the active volume ventilation when the chamber is immersed in water.

Inside the tube, there are two humidity indicators. The indicator color changes according to the humidity of the environment. Only white color of the indicator indicates that the humidity is suitable for the chamber operation.

Ordering Information

The NACP is available with three types of connector options, suited for different operation modes of the dosimeter used to readout the chamber:

953-000-TT

NACP - TNC Triax Connector



953-000-BT

NACP - BNC Triax Connector



These two types of triaxial connectors are designed to be used if signal and guard are kept at high voltage and the external cable shield to ground.

953-000

NACP - BNC / Banana Connector



This type of connector is used if the signal and the guard are kept at ground potential, and the polarizing voltage (high voltage) is applied via a banana jack to the chamber.

Stealth^{CHAMBER}TM

Perturbation Free "beam invisible" Reference Signal Chamber with IBA Blue Phantom family

The Stealth^{CHAMBER} is designed to ensure that a reference signal is available for all field sizes (up to 20x20cm with special focus in SRS, SBRT, small field dosimetry commissioning and QA) in continuous and/or in step-by-step scanning mode.

Available with TNC Triax connector.

It can be securely mounted with custom or vendor-specific holders in the beam where it does not shadow the field chamber/detector for the entire area of programmed positions, in order to produce accurate and reproducible scans.



Easy Attachment:

The IBA Stealth^{CHAMBER} is easily attached to the linac accessory tray and remains mounted throughout your measurements.

Unique Design

- Perturbation free "beam invisible" reference signal chamber for relative dosimetry
- Transmission detector design
- Patent pending

Unique Efficiency

- Avoid frequent chamber re-position in the bunker (avoid bunker excursions)
- No need to continually readjust the location of the reference detector
- Save 2 hours every commissioning day

Uncompromised Accuracy

- Excellent reproducible reference signal quality
- Perturbation-free signal for consistent high accuracy



Chamber and field size displayed in real size:

1 x 1 cm

Conventional reference chamber:

Overcome the need to frequently reposition conventional reference chambers especially for small fields.

Unique Stealth^{CHAMBER}:

Always have your reference signal measured regardless of field size! The transparent Stealth^{CHAMBER} design enables perturbation-free high-quality measurements in the most efficient way.

Ordering Information

DS50-000-T

Round Stealth^{CHAMBER} for circular stereotactic cones (e.g. Brain LAB Novalis)



Active area: 10 x 10 cm

Attenuation equivalent: <0.5 mm Al

Weight: 108 g

DS50-001-T

Square Stealth^{CHAMBER},
including SIEMENS Linac Adapter

DS50-002-T

Square Stealth^{CHAMBER},
including ELEKTA Linac Adapter



Cable mounting

DS50-003-T

Square Stealth^{CHAMBER},
including VARIAN Linac Adapter



Technical Specifications of Square Stealth^{CHAMBER}

Active volume: 240 ccm

Active area: 15 x 15 cm
(can be used for field sizes from 5 x 5mm, up to 20 x 20 cm)

Attenuation equivalent: <0.5 mm Al

Weight: 108 g

Diode Detectors

Diode detectors to be used with CCU

Ordering Information

EFD diode field detector, electron beams



Item	Value
Stem material	Stainless steel
Enclosure material	ABS and epoxy
Position of measurement point	Indicated by a cross-hair at the top of the detector
Effective measurement point	<p>≈ 1.0 mm from surface</p> <p>The actual value is measured individually and stated in the detector certificate.</p>
Chip size (mm)	2.1 × 2.1 × 0.4
Active detector diameter (mm)	1.6
Active detector thickness (mm)	0.08

999-602-T
999-602-BT

EFD diode field detector - with TNC Triax Connector
EFD diode field detector - BNC Triax Connector

Ordering Information

PFD diode field detector, photon beams

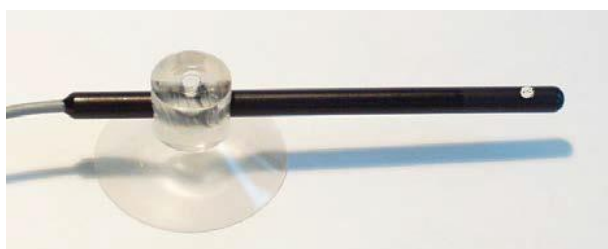


Item	Value
Stem material	Stainless steel
Enclosure material	ABS and epoxy
Position of measurement point	Indicated by a cross-hair at the top of the detector
Effective measurement point	≈ 1.0 mm from surface The actual value is measured individually and stated in the detector certificate.
Chip size (mm)	2.1 × 2.1 × 0.4
Active detector diameter (mm)	1.6
Active detector thickness (mm)	0.08

999-702-T
999-702-BT

PFD diode field detector - with TNC Triax Connector
PFD diode field detector - BNC Triax Connector

RFD diode reference detector



The reference detector is used only to obtain a reference signal for relative field measurements. By calculating the quotient of the field and the reference signals, the effect of the variations in the accelerator output is eliminated.

Item	Value
Enclosure material	ABS and epoxy
Measurement point	Indicated by a white dot on the detector
Chip size (mm)	2.1 × 2.1 × 0.4
Active detector diameter (mm)	1.6
Active detector thickness (mm)	0.08

999-802-T
999-802-BT

RFD diode reference detector - with TNC Triax Connector
RFD diode reference detector - BNC Triax Connector

RAZOR^{Detector}

Field Diode Detector for stereotactic beams

Diode detector with very low dose rate dependency, effective measurement depth 0.50 mm from surface, very high geometric resolution (0.6 mm in plane perpendicular to central axis, 0.06 mm in depth).

The Razor detector for relative dosimetry is a very small sized, rigid and long-lasting semiconductor detector with high dosimetric performances.

The Razor detector is based on a p-type silicon diode chip, specifically designed for radiation therapy applications, and in particular for the relative dosimetry of electron and stereotactic photon fields. Performances have been verified in the range of photon beam qualities ⁶⁰Co-15MV, and 6-15MeV electron energies.

The detector features a low sensitivity dependence on dose and dose per pulse.



The Razor detector works in photovoltaic mode, without any bias voltage. Due to the ionizing effect of radiation, electron-hole pairs are created in silicon. The signal is mostly generated by electrons which, after freely diffusing through the crystal, reach the n-p junction region and are swept by the built-in electric field of the depleted region. Electrons of pair directly generated inside the depleted region provide a minor contribution to signal as well.

Item	Value
Stem material	Stainless steel
Enclosure material	ABS plastic (acrylonitrile butadiene styrene) and epoxy
Position of measurement point	Indicated by a cross-hair at the top of the detector
Effective measurement point	0.8 ± 0.2 mm from surface
Chip size (mm)	0.95 × 0.95 × 0.4
Active detector diameter (mm)	0.6
Active detector thickness (mm)	0.02
Head diameter (mm)	4.0
Head length (mm)	15
Stem diameter (mm)	4.0
Total length (mm)	60

Stealth^{Chamber} in combination with Razor Detector makes Your Perfect Package for Small Field Dosimetry!

Ordering Information

999-760-T
999-760-BT

Razor Detector, with TNC Triax connector
Razor Detector, with BNC Triax connector

LDA-99 SC

Linear Detector Array

5x faster Beam Profile Measurements!

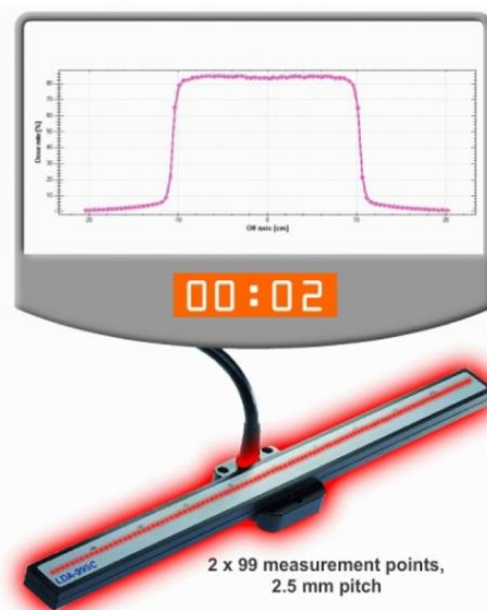
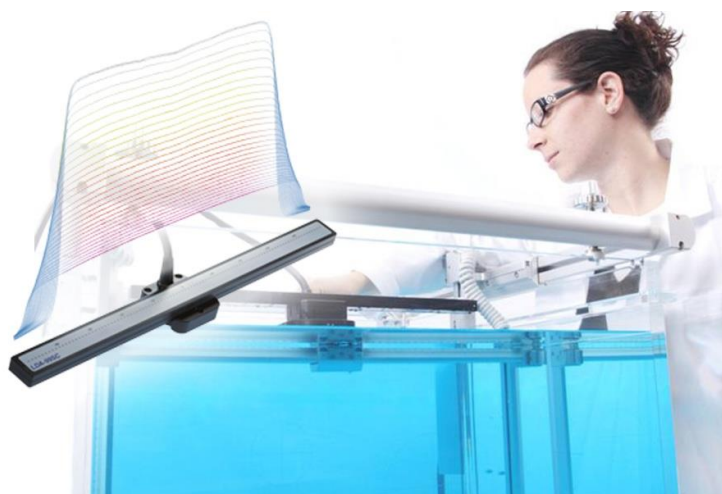
For fast and accurate commissioning of dynamic and virtual wedges as well as fast acquisition of standard inplane, crossplane and diagonal beam profiles.

Completely integrated in OmniPro-Accept software.

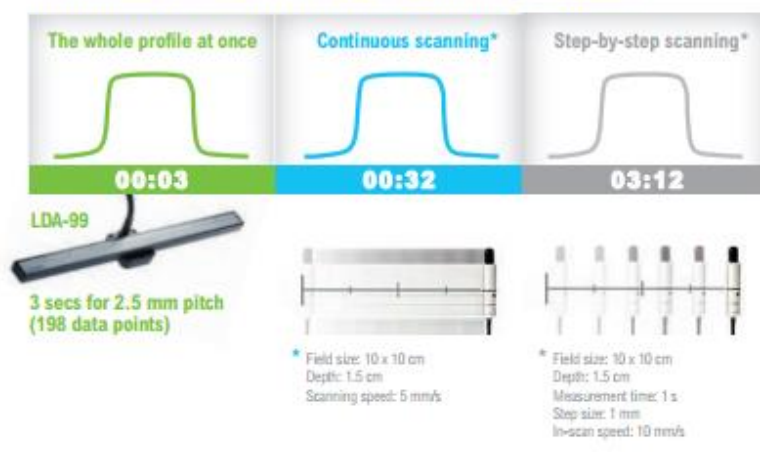
Data transfer via Ethernet connection.

Each item includes:

- LDA-99 SC detector array consisting of 99 Hi-pSi diode detectors with the highest spatial resolution of 5 mm between detector
- One reference detector
- emXX electrometer with 99 + 1 channels, 100-240V, 50/60Hz, one power cord included for either 230V plug, USA, UK, Australia or China.
- Holder for mounting the detector array in the corresponding water phantom
- 15 mm build-up for in-air measurements



COMPARISON OF BEAM PROFILE ACQUISITION MODULES

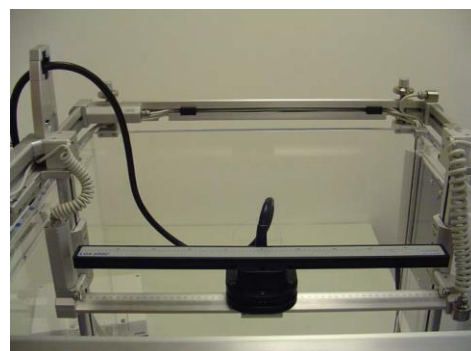


LDA-99: 'The Whole Profile at Once!'

Detectors, Holders and Build-up Caps

The LDA-99 SC is intended for measurement of dose distributions in static and dynamic radiation fields produced by radiotherapy treatment units.

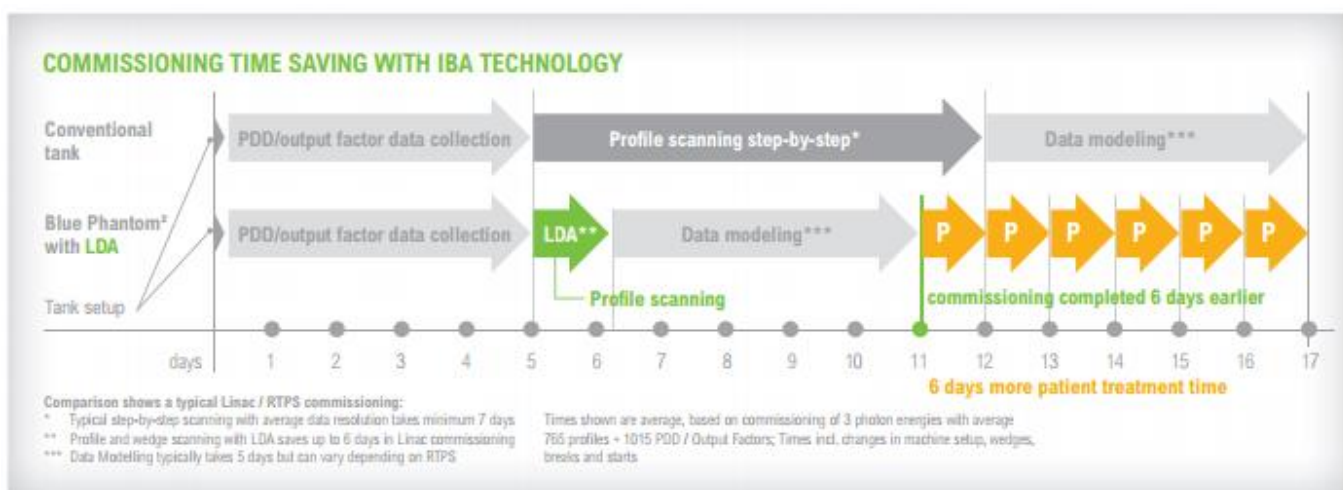
The measurements are intended for commissioning, quality assurance during or after service or test of an accelerator, and for research purposes. The measurements can be performed in water, or in air with a build-up cap.



LDA-99 SC in the **Blue Phantom²**

The LDA-99 SC is a linear detector array, used in conjunction with the emXX, a 99 +1 channel electrometer.

For measurements with LDA-99 SC, a control unit (for measurements in water phantoms), and a reference detector with reversed output signal are required.



Ordering Information

- | | |
|----------|--|
| LA10-500 | LDA-99SC
Linear detector array system
for <u>Blue Phantom²</u> |
| LA10-100 | LDA-99SC
Linear detector array system
for <u>Blue Phantom (1st Generation)</u> |
| LA10-300 | LDA-99SC
Linear detector array system
for <u>RFA-300</u> |

Conversion Kits

- | | |
|----------|---|
| LA12-550 | Conversion kit to mount the <u>LDA-99SC</u>
for Blue Phantom (1 st Generation)
or RFA-300 into Blue Phantom ² |
| LA12-500 | Conversion kit to mount the <u>LDA-99</u>
for Blue Phantom (1 st Generation)
or RFA-300 into Blue Phantom ² |
| LA12-600 | Conversion kit to mount the <u>LDA-99SC</u>
for Blue Phantom ²
into Blue Phantom (1 st Generation) |

Note: The LDA-99SC used in Blue Phantom² cannot be adapted for use in RFA-300 with the same holder.

Detector Holders and Caps Holders

Holders for Blue Phantom²

Ordering Information



*Universal detector holders:
Diameter 10-15 mm (left side), and
Diameter 4-10 mm (right side)*

NP20-100

Small Universal Detector Holder

for compact thimble ionization chambers and diode detectors as well as third party detectors with a diameter of 4 mm to 10 mm

NP20-150

Large Universal Detector Holder

for compact thimble and Farmer type ionization chambers as well as third party detectors with a diameter of 10 mm to 15 mm

NP20-200

Universal parallel plate chambers Detector Holder



NP20-300

Adapter for Sun Nuclear Edge Detector in Blue Phantom²

Note: Small Universal Detector holder (item number NP20-100) required.

M1024400

Adapter for PTW TRUFIX system in Blue Phantom²

SVC-0004

Adapter cable for connection of PTW M-type detectors to CCU, on cable reel

5 m adapter cable, with one side for connection of a PTW detector with M-type connector, while other side has TNC-connector, to connect to the CCU electrometer input.

SVC-0005

Adapter cable for connection of PTW M-type detectors to CCU, without cable reel

Metal Caps for TPS Air Measurements

Nickel-Silver Caps for CC13

Ordering Information

PS11-000

Set of 8 caps for ion chamber CC13, made of Nickel-Silver (density 8.62 g/cm³) for Helax TMS, Elekta Renderplan/Preciseplan and Nucletron Oncentra Masterplan



Energy ranges:

Co-60, 4-6 MV, 8-10 MV, 10-12 MV, 12-15 MV, 15-18 MV, 18-20 MV, 20 - 23 MV

Note:

Holder NP20-150 required for use in Blue Phantom²

Holder PS11-100 required for use in Blue Phantom (1st generation)

Holder PS11-300 required for use in RFA-300

Nickel-Silver Caps for CC04

Ordering Information

SA76-000	Cap for CC04, 4 - 6 MV
SA76-100	Cap for CC04, 8 - 10 MV
SA76-200	Cap for CC04, 10 - 12 MV
SA76-300	Cap for CC04, 12 - 15 MV
SA76-400	Cap for CC04, 15 - 18 MV
SA76-500	Cap for CC04, 18 - 20 MV



Note:

Holder NP20-150 required for use in Blue Phantom²
 Holder PS11-100 required for use in Blue Phantom (1st generation)

Brass Build-up Caps for PFD and EFD

Ordering Information

735491

Set of 5 brass build-up caps for PFD and EFD 3^{G} -pSi field detectors for in-air measurements for Helax TMS, Elekta Renderplan/Preciseplan and Nucletron Oncentra Masterplan (2, 4, 6, 8 and 10 mm wall thickness)



Note:

Holder NP20-100 required for use in Blue Phantom²

Holder PH47-000 required for use in Blue Phantom (1st generation)

Holder 738228 required for use in RFA-300

PMMA Build-up Caps for CC04

Ordering Information

SA75-000

28 mm diameter for 4 - 6 MV photon and 8 - 12 MeV electron



Ordering Information

SA75-100

38 mm diameter for 6 - 10 MV photon
and 12 - 18 MeV electron



SA75-200

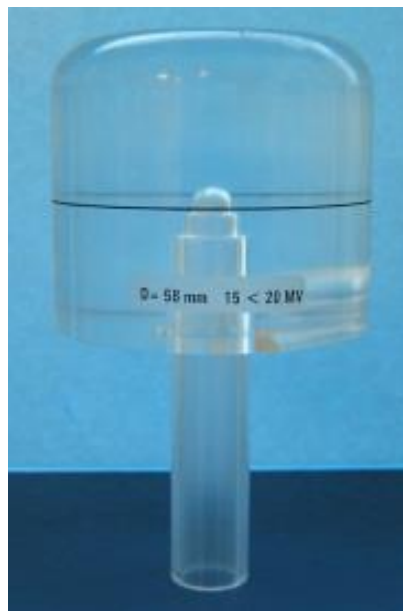
48 mm diameter for 10 - 15 MV photon
and > 18 MeV electron



Ordering Information

SA75-300

58 mm diameter
for 15 - 20 MV photon



SA75-400

78 mm diameter
for 20 - 30 MV photon



Note:

Holder NP20-150 required for use in Blue Phantom²

Holder SA67-000 required for use in Blue Phantom (1st generation)

PMMA Build-up Caps for CC13

Ordering Information

SA61-000 13 mm diameter for 1 - 4 MV photon
and 4 - 8 MeV electron



SA62-000 30 mm diameter for 4 - 6 MV photon
and 8 - 12 MeV electron



SA63-000 40 mm diameter for 6 - 10 MV photon
and 12 - 18 MeV electron



Ordering Information

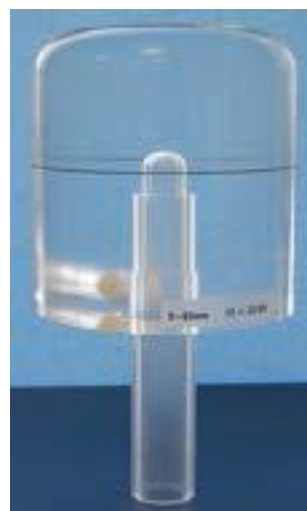
SA64-000

50 mm diameter for 10 - 15 MV photon
and > 18 MeV electron



SA65-000

60 mm diameter
for 15 - 20 MV photon



SA66-000

80 mm diameter for 20 - 30 MV photon

Note:

Holder NP20-150 required for use in Blue Phantom²

Holder SA67-000 required for use in Blue Phantom (1st generation)

PMMA Build-up Caps for FC65-G / FC65-P

Ordering Information

SA69-000	30 mm diameter for 4- 6 MV photon and 8 - 12 MeV electron
SA70-000	40 mm diameter for 6-10 MV photon and 12 - 18 MeV electron
SA71-000	50 mm diameter for 10-15 MV photon and 18 MeV electron
SA72-000	60 mm diameter for 15 - 20 MV photon



Cabling

Triaxial

Detector

Cables

Triaxial Detector Cables, TNC triax connectors

Ordering Information

5m length

(Available upon request in additional lengths. up to 10m)

Note: The CCU requires 5m cables.

DS10-005	Triaxial ion chamber/diode detector cable (low noise), 5m on cable reel
DS13-005	Triaxial ion chamber/diode detector cable (low noise), 5m <u>without</u> cable reel
DS10-205	Thick version of triaxial ion chamber/diode detector cable (low noise) 5m on cable reel, thick version (Ø 5.3mm)
DS13-205	Thick version of triaxial ion chamber/diode detector cable (low noise) 5m <u>without</u> cable reel, thick version (Ø 5.3mm)

18m length

(Available upon request in other lengths: 15, 20, 25 and 30m)

DS10-018	Triaxial ion chamber/diode detector cable (low noise), 18m on cable reel
DS13-018	Triaxial ion chamber/diode detector cable (low noise), 18m <u>without</u> cable reel
DS10-218	Thick version of triaxial ion chamber/diode detector cable (low noise) 18m on cable reel, thick version (Ø 5.3mm)
DS13-218	Thick version of triaxial ion chamber/diode detector cable (low noise) 18m <u>without</u> cable reel, thick version (Ø 5.3mm)

Triaxial Detector Cables, BNC triax connectors

Ordering Information

5m length

(Available upon request in additional lengths, up to 10m)

DS10-105	Triaxial ion chamber/diode detector cable (low noise), 5m on cable reel
DS13-105	Triaxial ion chamber/diode detector cable (low noise), 5m <u>without</u> cable reel
DS10-305	Thick version of triaxial ion chamber/diode detector cable (low noise) 5m on cable reel, thick version (Ø 5.3mm)
DS13-305	Thick version of triaxial ion chamber/diode detector cable (low noise) 5m <u>without</u> cable reel, thick version (Ø 5.3mm)

18m length

(Available upon request in other lengths: 15, 20, 25 and 30m)

DS10-118	Triaxial ion chamber/diode detector cable (low noise), 18m on cable reel,
DS13-118	Triaxial ion chamber/diode detector cable (low noise), 18m <u>without</u> cable reel
DS10-318	Thick version of triaxial ion chamber/diode detector cable (low noise), 18m on cable reel, thick version (Ø 5.3mm)
DS13-318	Thick version of triaxial ion chamber/diode detector cable (low noise) 18m <u>without</u> cable reel, thick version (Ø 5.3mm)

Plan Delivery Verification

IBA offers different packages for Plan Delivery Verification customized according to your needs and budget.



myQA Patients – your platform-based Plan Verification

myQA Patients is your efficient, intuitive and connected solution for patient plan verification of your IMRT, rotational and FFF treatments. Designed to increase your efficiency and to reduce your QA time, myQA Patients offers you full control of your patient data.

Measurement is effected with the **MatriXX** detector of your choice. Rotational IMRT plan verification is facilitated with the use of **MultiCube** and/or other IBA **IMRT phantoms**.



Compass – Application for patient-specific, anatomy-based 3D plan verification. By maximizing efficiency and minimizing errors with accuracy, it is the ultimate solution in **patient-specific** plan verification. The complete package comes with a **MatriXX Evolution** detector.



Dolphin – the first and only Online Treatment Monitoring System, it is your unique solution for better patient care and maximized treatment safety.

The wireless Dolphin transmission detector, with its unique and patient-friendly design, is mounted and secured on the Linac gantry head for measurements during the actual patient treatment. The advanced software application provides you with online control and confidence of treating your patients exactly as planned – until the last fraction delivered.

myQA™ is your
All-in-One Platform



myQA Patients

myQA Patients

1 Import



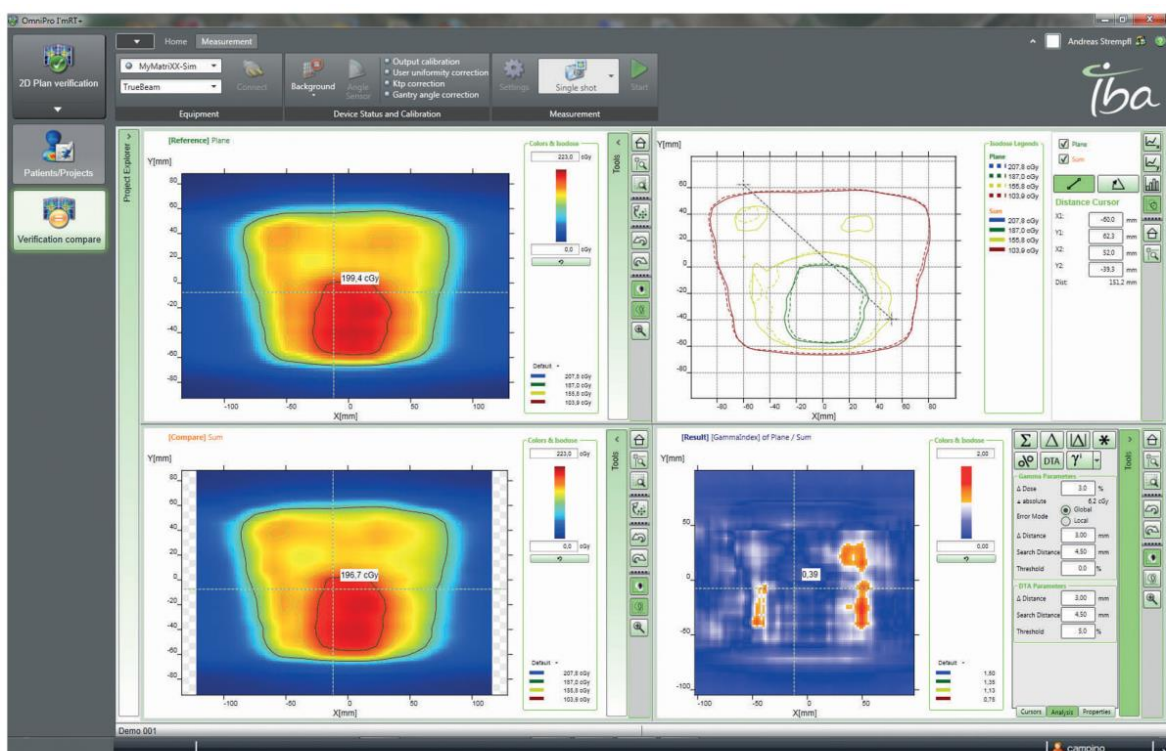
2 Measure



3 Verify



4 Report



Your platform-based plan verification

myQA Patients is your efficient, intuitive and connected solution for patient plan verification of your IMRT, rotational and FFF treatments. Designed to increase your efficiency and to reduce your QA time, myQA Patients offers you full control of your patient data.

1. Import

Flexible & Full DICOM Interface

- Read DICOM files
- Query and retrieve from DICOM Server
- DICOM listener for import via network
- Import from a DICOMDIR
- Import of proprietary dose and fluence files

Variety of supported dose and fluence map formats, e.g. RTDOSE, Monaco, Eclipse, XiO, Pinnacle, ...

Quick Patient Overview

- Intuitive data organization in patient browser
- Patient list with extensive sorting and filtering function (e.g. by case or workflow status)
- Automatic Project Creation with the DICOM information
- Approval status
- Workflow status flags
- Workflow due dates
- Patient status visible in the **myQA Cockpit*** – anytime, anywhere

2. Measure

Workflow Oriented – Measurement Control

- Intuitive operation
- Visual confirmations
- Beam trigger mode
- Real-time display during measurements
- Consistency in all myQA applications

Interface to MatriXX detectors

- High accuracy for rotational cases with Gantry Angle Sensor
- Automated correction of the angular dependency
- User uniformity and absolute dose calibration
- Automated ktp correction
- Use of **myQA FastTrack*** for real-time machine performance measurements and analysis

3. Verify

Efficiency

- Automated gamma results
- Improved new gamma algorithm with more accurate and faster results

Comprehensive Verification

- Single/composite IMRT fields
- Relative/absolute dose evaluation
- Advanced local and global gamma evaluation
- Histogram analysis and automated statistics
- Excellent visualization of 1D and 2D data including profiles, isodose contours, and 2D dose distributions
- Extensive cursor analysis functions like distance, position and angle measurements
- Wide range of analysis algorithms: Sum, (absolute) Difference, DTA, Multiplication, Correlation
- Restore raw data anytime
- Full traceability

4. Reporting and Approval

Fast reporting and archiving on the database

- Full control of the patient data in the central database of myQA
- Electronic approval including comments
- Flexible and safe user management / user rights
- Report as RTF, HTML, or PDF
- Data export via clipboard e.g. to MS Excel, via ACSII or CSV

License for activation of **myQA Patients** is on one workstation. Additional licenses are available (please see list below).

For recommended computer and database server requirements, please refer to the specifications provided under the separate section entitled “System Requirements”.

Ordering Information (requires myQA Platform)

MQ02-000	myQA Patients
UQ02-001	Upgrade from OmniPro-I'mRT 1.x to myQA Patients
UQ02-002	Upgrade from OmniPro-I'mRT+ to myQA Patients
UQ02-010	myQA Patients for COMPASS ^{Pro}

Optional

MQ01-000	myQA Cockpit
MQ00-200	myQA FastTrack

Additional Licenses

AQ02-001	Additional license, myQA Patients
AQ02-005	Additional 5 licenses, myQA Patients
AQ02-010	Additional 10 licenses, myQA Patients

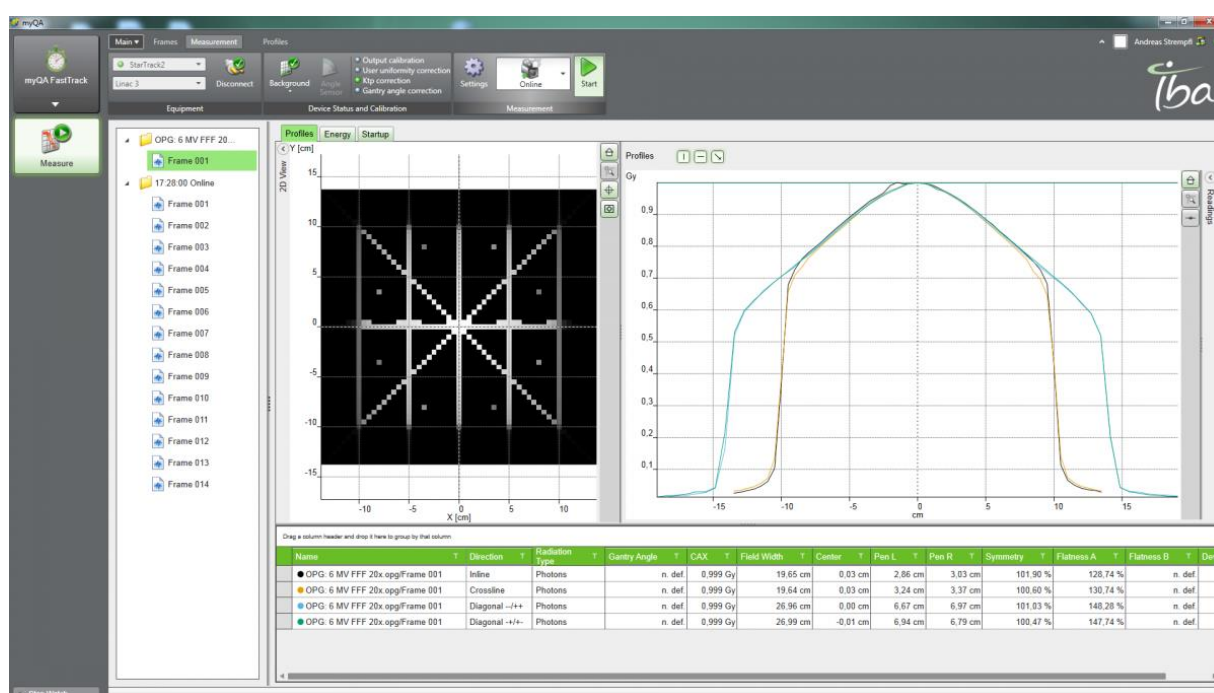
Related Detectors and Phantoms

BS60-500	MatriXX Evolution
BS60-600	MatriXX FFF
BS50-000	MULTICube
BS51-000	MULTICube Lite

**Images presented in this document may vary from the actual screen shots of the software. IBA reserves the right to modify the screen layout without prior notice.*

myQA FastTrack

Software application for fast measurement and data analysis with your StarTrack* or MatriXX detector



- Connect to your StarTrack* or MatriXX detector
- Measure
- Instant display of results and real-time analysis (e. g. for beam steering) such as:
 - Dose output
 - Energy check with energy verification plates
 - Profile analysis according to standard protocols (symmetry, flatness, penumbra etc.)
 - Profile comparison
 - Time based measurements (e. g. for analysis of start-up behavior)

The application is fully integrated into the **myQA** platform for common set-up, calibrations and interfacing with **myQA Patients** and **myQA Machines**.

Measured data can be imported and exported via ASCII files.

Per installation.

Ordering Information (myQA Platform is required)

MQ00-200	myQA FastTrack
MQ00-200	myQA FastTrack for existing OmniPro-I'mRT / Advance installations

Related Detectors and Accessories

BS60-500	MatriXX Evolution
BS60-600	MatriXX FFF
BS80-100	StarTrack including Energy Verification Plates



COMPASS
THE 2-IN-1 CHOICE

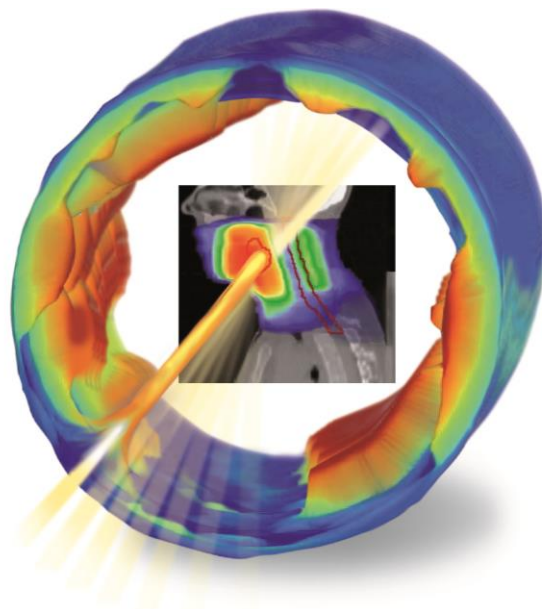
COMPASS^{Pro}

Two-in-One Solution for Patient Dose Analysis

Workflow efficiency and flexibility with measurement- and calculation-based verification

Comprehensive and advanced 3D plan verification with the special package *COMPASS^{Pro}*.

Calculation- and measurement-based pre-treatment plan verification for IMRT, FFF and rotational treatment techniques (VMAT / RapidArc) on the patient-specific CT using the MatriXX detector array.



The license for one-time installation of every module includes the following:

➤ Application for patient-specific 3D plan verification

2-in-1 Solution for measurement-based and calculation-based plan verification comprising a full blown dose engine to verify the plan delivery throughout the treatment planning chain, from the TPS calculation to the linac delivery.

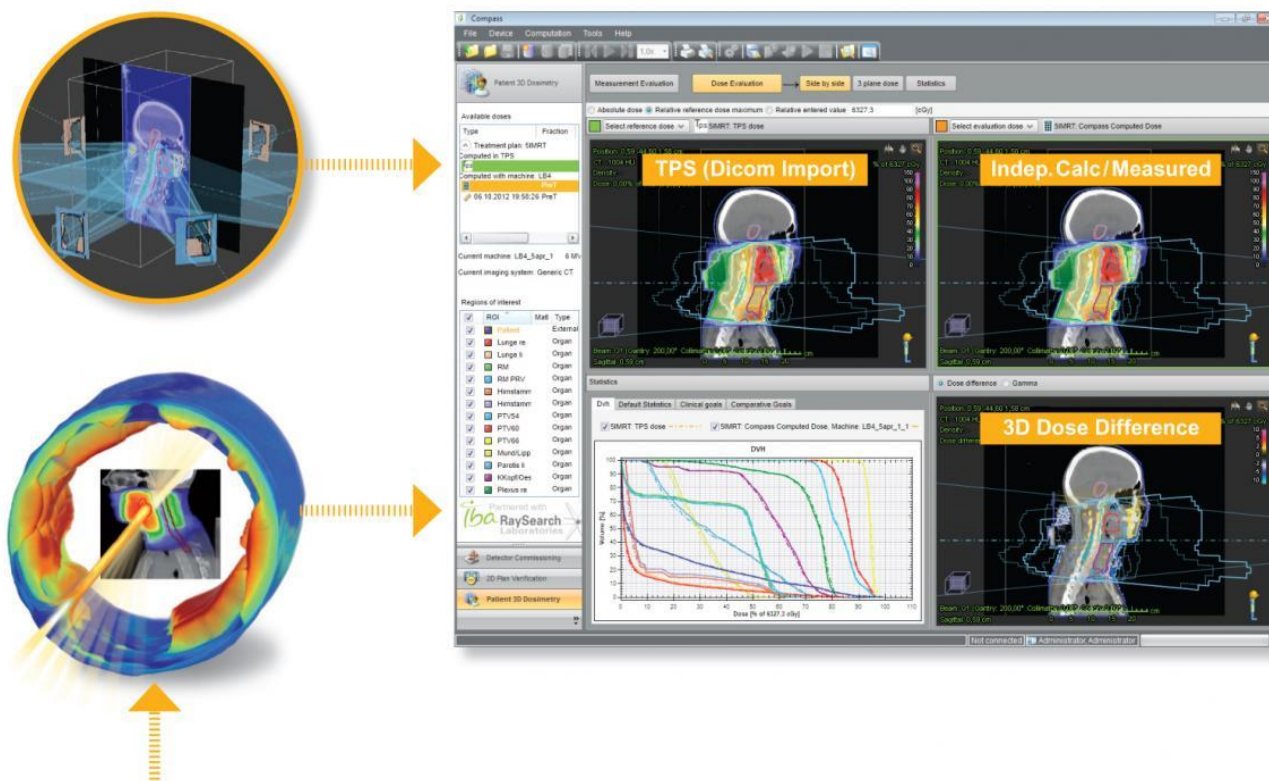
The system verifies the plan, the arcs/beams and the control points/segments of the VMAT arcs or IMRT fields. A measurement-assisted 3D dose reconstruction in the patient anatomy is performed using the MatriXX for the indirect verification of the fluence and an advanced collapsed cone algorithm for the accurate dose calculation on the planning CT.

The result is finally compared to the TPS using modern analysis tools.

- ✓ Advanced Collapsed Cone dose engine for state of the art accuracy in the dose calculation
 - TPS class algorithm
- ✓ 3D Dose distributions rendered in the patient anatomy, based on original heterogenic planning CT
 - No QA-Plan (hybrid plan) required, verify the original treatment plan
- ✓ Full blown linac modeling with enhanced beam commissioning workspace (machine templates for main linac versions available, auto-modeling tools included for fast commissioning)
 - Independent secondary dose calculation

- ✓ Dose reconstruction in 3D on patient anatomy based on the measurements to display the effect of measured deviations on the dose distribution
 - No dose deformation
 - Independent dose reconstruction
- ✓ Advanced and proven validation tools (DVH, local and global 3D gamma, 3D dose difference)
 - Confidence in the verification result
- ✓ Advanced statistics tools (clinical goals, comparative goals) with pass/fail indication in one look
 - Common platform for Oncologist and Physicist
- ✓ DICOM RT import/export (RTDose, RTPlan, RTStruct, CT)
- ✓ Flexible report generator (pdf, rft, xls, xlsx, docl, mht, image file format)
- ✓ Central database using reliable technology (Microsoft SQL Server)

*For recommended computer and database server requirements, please refer to the specifications provided under the separate section entitled “**System Requirements**”.*



➤ MatriXX Measurement Console

Measurement Console software with the MatriXX Detector

- ✓ Detector measurements for pre-treatment verification
- ✓ Auto-mode for efficient handling and seamless integration in the clinical workflow
- ✓ QuickCheck:
 - fully automated analysis of the indirect fluence measurement
 - gamma or dose difference results in one look
 - automatic evaluation based on individual protocols
- ✓ Detector response prediction based on individual Linac head model, 3.5 high resolution Monte Carlo modelling of the detector response
- ✓ Time resolved indirect fluence analysis based on measured response
- ✓ Smart measurement browser for efficient measurement data handling
- ✓ 2D Plan verification workspace for comprehensive analysis of detector responses and dose distributions
- ✓ Advanced and efficient detector administration
- ✓ Data is safely stored in the main database





➤ **MatriXX^{Evolution} Detector Array**

2D detector array optimized for fast and accurate verification of rotational delivery IMRT beams versus planned data as well as Linac Machine QA.

The **MatriXX^{Evolution}** consists of 1020 air vented pixel ionization chambers uniformly distributed among an area of 24 x 24 cm² at 100 cm SDD. The distance between the individual detectors is 7.6 (center to center).

The **MatriXX^{Evolution}** includes a temperature and pressure sensor to perform an automated k(t,p) correction of the chamber signal.

The parallel readout of all 1020 detectors with a minimum sampling frequency of 20 ms enables acquisition of both, individual IMRT segments as well as the total integrated delivered dose.

A gantry angle sensor connected to the device measures the gantry rotation angle directly.

The **MatriXX^{Evolution}** is easy to setup and align. It can be operated on the treatment couch (e.g. in a phantom like the MULTICube) or in a gantry holder, attached to the Linac head. The data transfer to a PC or laptop goes via an Ethernet connection. All necessary cabling is included.

➤ **Advanced holder for MatriXX for mounting to accelerator gantry (BS65-000)**

Including the adjustable XY table with high precision knobs for additional flexibility of extremely accurate positioning. Very fine lateral (relative to the radiation field) and angular (about the central axis of the beam) adjustment of the MatriXX.

➤ **Gantry fixture for MatriXX gantry holder at 76.2 cm or 100 cm SDD**

Technical specifications of the MatriXX^{Evolution}

Special components for metal-artifact free imaging.

Number of chambers and type:

1020 air vented ionization chambers

Active area: 24.4 x 24.4 cm²

Sensor layout: matrix in a plane, arranged in a 32 x 32 grid

Pixel distance: 7.62 mm center-to-center

Chamber size: 4.5 mm diameter x 5 mm height

Sensitive chamber volume: 80 mm³

Effective point of measurement:

3 mm from surface (water equivalent value 3.1 mm)

Nominal sensitivity: 2 nC/Gy

Minimum dose rate: 0.2 Gy/min

Electrometer:

1020 channels

16 TERA chips (each has 64 individual electrometers)

Parallel readout, no dead time

Sampling rate: 20 ms

Charge collection efficiency:

≥ 99.0% at 0.3 mGy/pulse, 300-360Hz PRF

≥ 98.5% at 0.6 mGy/pulse, 300-360 Hz PRF

≥ 97.0% at 1.1 mGy/pulse, 300-360 Hz PRF

Power supply:

100 - 240 V, 50/60 Hz, power cord for 230 V included (for 115 V, please order BS61-510)

Deviation from linearity: ≤ 1% if the dose is ≥ 0.02 Gy

Dimensions: 56 cm (L) x 6 cm (H) x 32 cm (W)

Approximate weight: 10 kg

Gantry Angle accuracy: +/- 0.6°

Ordering Information

For complete packages

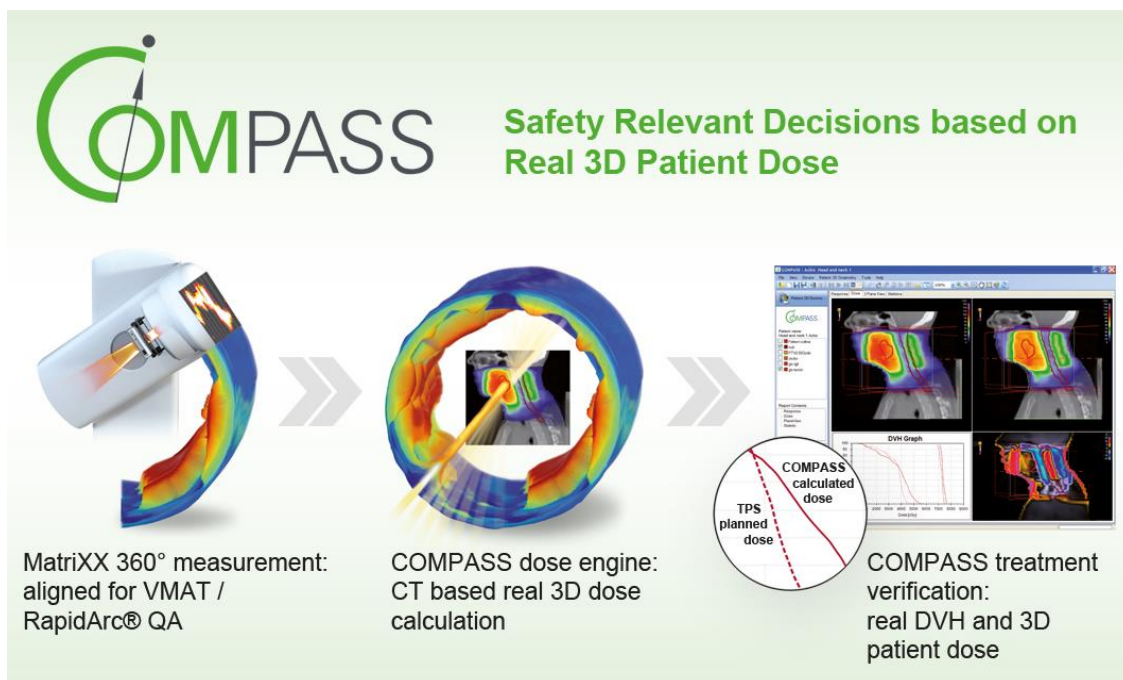
CS10-351	COMPASS ^{Pro} with 76.2 cm SDD gantry fixture for MatriXX gantry holder for Siemens Linac
CS10-352	COMPASS ^{Pro} with 76.2 cm SDD gantry fixture for MatriXX gantry holder for Elekta Linac
CS10-353	COMPASS ^{Pro} with 76.2 cm SDD gantry fixture for MatriXX gantry holder for Varian Linac
CS10-354	COMPASS ^{Pro} with 100 cm SDD gantry fixture for MatriXX gantry holder for Siemens Linac
CS10-355	COMPASS ^{Pro} with 100 cm SDD gantry fixture for MatriXX gantry holder for Elekta Linac
CS10-356	COMPASS ^{Pro} with 100 cm SDD gantry fixture for MatriXX gantry holder for Varian Linac

For existing MatriXX^{Evolution} users

CS10-360	Upgrade to COMPASS ^{Pro} for existing MatriXX ^{Evolution} users
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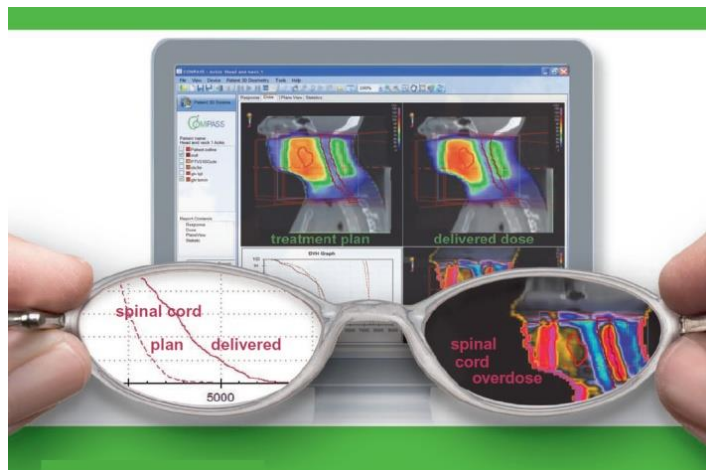
Note: A Gantry Mount (gantry fixture and advanced MatriXX holder) at 76.2 cm SDD or 100 cm SDD is required for COMPASS. Please see separate section on "**Gantry Mount Solutions**".

Note: The software is already covered by a Software Coverage. Please see separate section on "**Service and Maintenance**" in the international price list.



COMPASS TPS Check

Advanced Secondary Dose Calculation Software



Verify the patient plans beyond the standard MU check quality

The license for one-time installation of the COMPASS TPS Check module includes:

- ✓ Advanced Collapsed Cone dose engine for state of the art accuracy in the dose calculation
 - TPS class algorithm
- ✓ 3D Dose distributions rendered in the patient anatomy, based on original heterogenic planning CT
 - No QA-Plan (hybrid plan) required, verify the original treatment plan
- ✓ Full blown linac modeling with enhanced beam commissioning workspace (machine templates for main linac versions available, auto-modeling tools included for fast commissioning)
 - Independent secondary dose calculation
- ✓ Dose reconstruction in 3D on patient anatomy based on the measurements to display the effect of measured deviations on the dose distribution
 - No dose deformation
 - Independent dose reconstruction
- ✓ Advanced and proven validation tools (DVH, local and global 3D gamma, 3D dose difference)
 - Confidence in the verification result
- ✓ Advanced statistics tools (clinical goals, comparative goals) with pass/fail indication in one look
 - Common platform for Oncologist and Physicist
- ✓ DICOM RT import/export (RTDose, RTPlan, RTStruct, CT)
- ✓ Flexible report generator (pdf, rft, xls, xlsx, docl, mht, image file format)
- ✓ Central database using reliable technology (Microsoft SQL Server)

Note: Calculation-based verification only.

Please refer to **COMPASS^{Pro}** for measurement-based verification of the complete treatment chain including your linac.

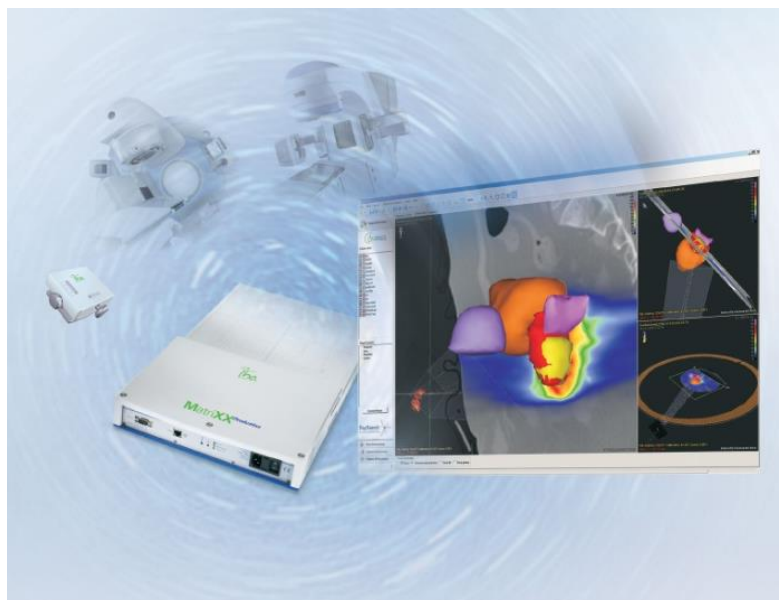
For recommended computer and database server requirements, please refer to the specifications provided under the separate section entitled "System Requirements".

Ordering Information

CS10-250 COMPASS TPS Check

COMPASS Measurement Console

For MatriXX
measurements



The license for one-time installation of the COMPASS Measurement Console includes:

- ✓ Detector measurements for pre-treatment and online verification
- ✓ Auto-mode for efficient handling and seamless integration in the clinical workflow
- ✓ QuickCheck:
 - fully automated analysis of the indirect fluence measurement
 - gamma or dose difference results in one look
 - automatic evaluation based on individual protocols
- ✓ Detector response prediction based on individual Linac head model, 3.5 high resolution Monte Carlo modelling of the detector response
- ✓ Time resolved indirect fluence analysis based on measured response
- ✓ Smart measurement browser for efficient measurement data handling
- ✓ 2D Plan verification workspace for comprehensive analysis of detector responses and dose distributions
- ✓ Advanced and efficient detector administration
- ✓ Data is safely stored in the main database



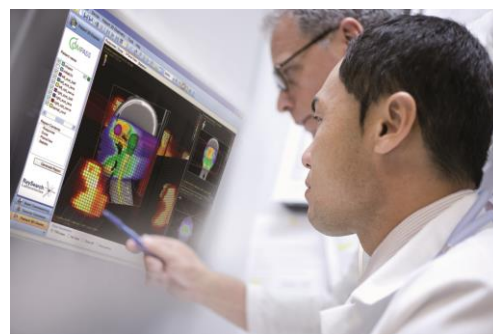
Note: A Gantry Mount (Gantry Fixture and Advanced MatriXX holder) at 76.2 cm SDD or 100 cm SDD is required for COMPASS Measurement Console.

For recommended computer and database server requirements, please refer to the specifications provided under the separate section entitled “System Requirements”.

Ordering Information

CS10-380	COMPASS Measurement Console for MatriXX measurements
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COMPASS Viewing Station



Evaluate your COMPASS data wherever you want

The license for one-time installation of this module includes:

- ✓ Evaluation of dose distributions and statistics
- ✓ Approval of treatment plans
- ✓ Access to the main COMPASS Database

Ordering Information

CS10-500 COMPASS Viewing Station

Note: The viewing station is not capable of any calculations or measurements. A maximum of five (5) Viewing Stations may be purchased for every COMPASS Main Software Application.

Additional Beam Commissioning for existing COMPASS users

Implementation of an additional beam model
for a clinical use of COMPASS

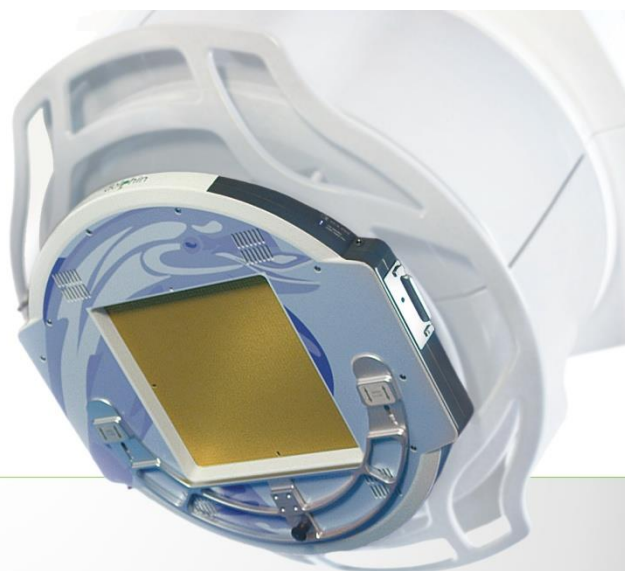
Note:

Requires the availability of scan data and Linac / MLC geometry information according to the "Preparation of installation" worksheet.

Ordering Information

CS10-800 Additional Beam Commissioning for
existing COMPASS users

dolphin[®]



Online Treatment Monitoring

Dolphin

The first and only Online Treatment Monitoring System



ONLINE Care™

- ✓ Unique patient friendly design
- ✓ Seamless integration in your clinical workflow



ONLINE Control™

- ✓ ONLINE plan verification, during the actual patient treatment
- ✓ Quick Check: Automated analysis of the detector response instantly after each fraction
- ✓ 3D dose reconstruction in the patient anatomy based on patient CT



ONLINE Confidence™

- ✓ Independent secondary dose calculation using TPS class collapsed cone algorithm
- ✓ Most efficient online and pre-treatment verification
- ✓ Advanced analysis and proven TPS tools – common platform for Oncologist and Physicist
- ✓ Central database, comprehensive and flexible reports

Dolphin – Online Treatment Monitoring System includes the following:

- **Dolphin Detector**
- **Dolphin Measurement Console**
- **Application for Patient-specific 3D Plan Verification**
- **Software Coverage**

The software modules are provided with one license each. They can be installed on different PCs or on the same computer.

Please note that the confirmation for the accessory approval of the Linac vendors is pending.

➤ Dolphin Detector

The Detector for Online Treatment Monitoring.

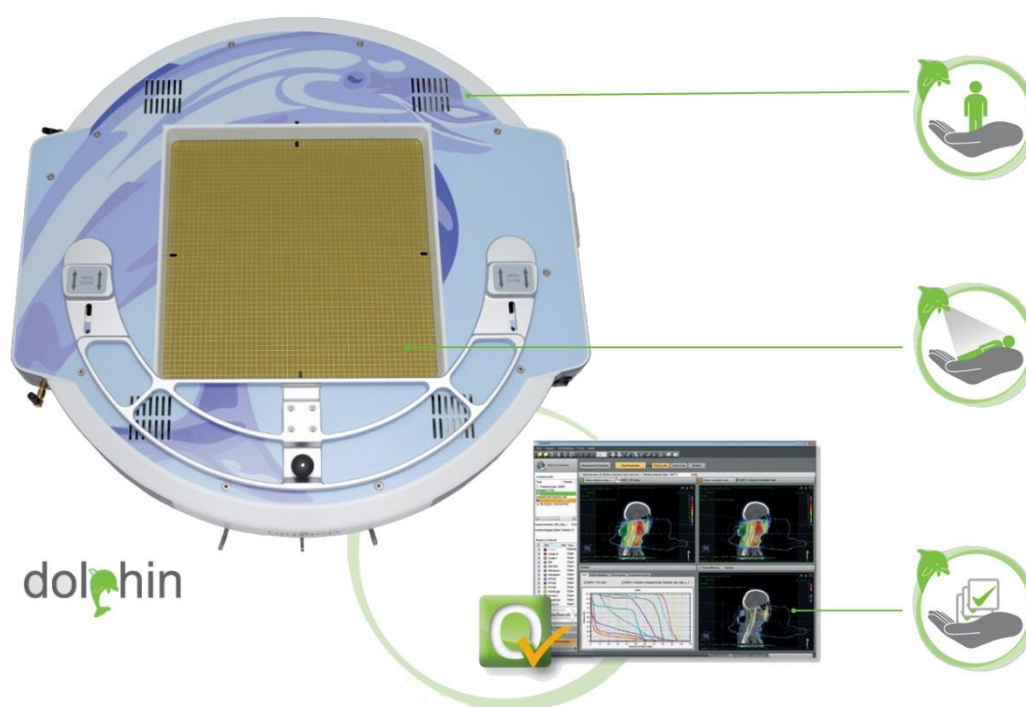
Designed for Performance, the wireless Dolphin transmission detector is mounted and secured on the Linac gantry head for measurements during the actual patient treatment.

- ✓ Unique patient-friendly design
- ✓ 1513 gold standard air vented ionization chambers
- ✓ 5 mm resolution in the central area
- ✓ Full 40 x 40 cm² field size coverage
- ✓ Sensor layout designed for efficient treatment plan QA and machine QA
- ✓ Optimized for rotational treatments: Built-in Gantry Angle & Tilt Sensor
- ✓ Cable-free operation (battery powered and wireless data transfer)
- ✓ Slim design – Maximum clearance
- ✓ Fast and easy attachment to the Linac head
- ✓ No hardware setup time

Technical Specifications* of Dolphin Detector:

Sensor:	1513 air vented ionization chambers
Active area:	24.4 x 24.4 cm ² , full field size 40 x 40 cm ² supported
Sensor layout:	5 mm center to center distance in the inner 15 x 15 cm ² field 10 mm in the outer area Center, Inline, Crossline and Diagonals covered
Chamber size:	3.2 mm diameter x 2 mm height
Sensitive chamber volume:	16 mm ³
Nominal sensitivity:	1.8 nC/Gy, measured in the central detector area with 1Gy at the isocenter at 5cm depth with a 10x10cm ² 6MV field.
Sampling rate:	20 ms, parallel readout, no dead time
Battery life:	2 x 5 h, LED charge indicator
Outer dimensions:	600 mm diameter x 57 mm height
Approximate weight:	12 kg
Gantry Angle accuracy:	+/- 1°

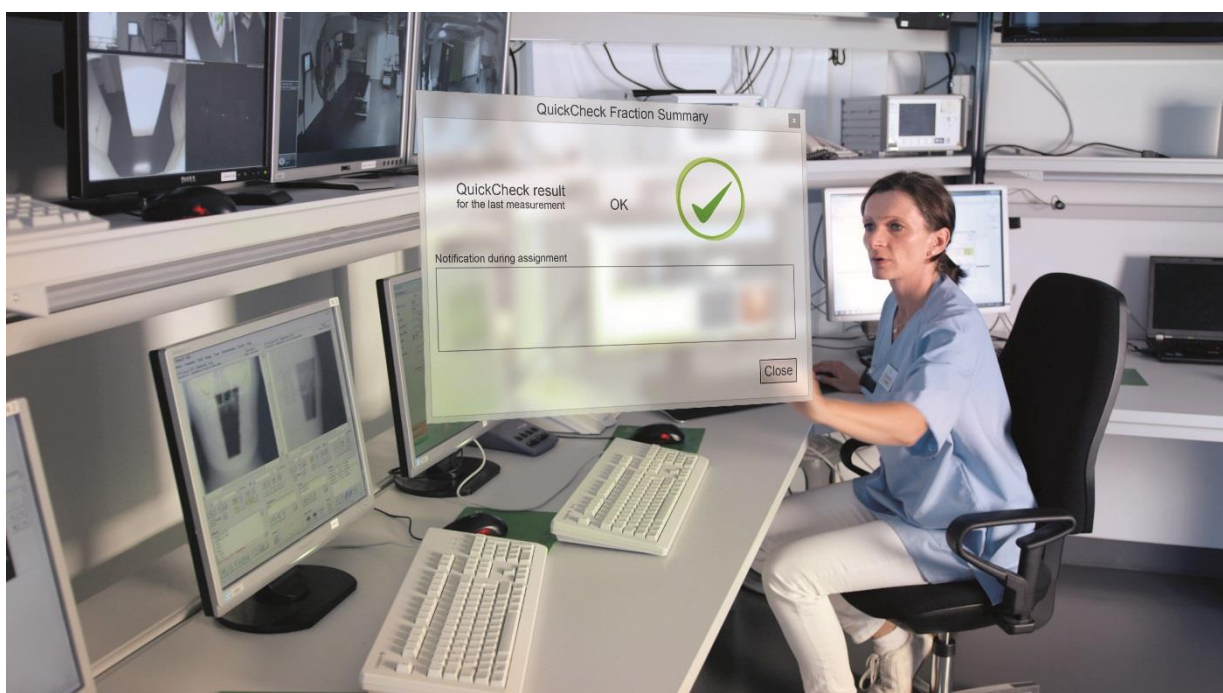
***Note:** Technical specifications are subject to change without prior notice.



➤ Dolphin Measurement Console

Measurement Console software for Online Treatment Monitoring with the Dolphin Detector

- ✓ Dolphin measurements for pre-treatment and online verification
- ✓ Auto-mode for efficient handling and seamless integration in the clinical workflow
- ✓ QuickCheck:
 - fully automated analysis of the indirect fluence measurement
 - gamma or dose difference results in one look
 - automatic evaluation based on individual protocols
- ✓ Detector response prediction based on individual Linac head model, 3.5 high resolution Monte Carlo modelling of the detector response
- ✓ Time resolved indirect fluence analysis based on measured response
- ✓ Smart measurement browser for efficient measurement data handling
- ✓ 2D Plan verification workspace for comprehensive analysis of detector responses and dose distributions
- ✓ Advanced and efficient detector administration
- ✓ Data is safely stored in the main database

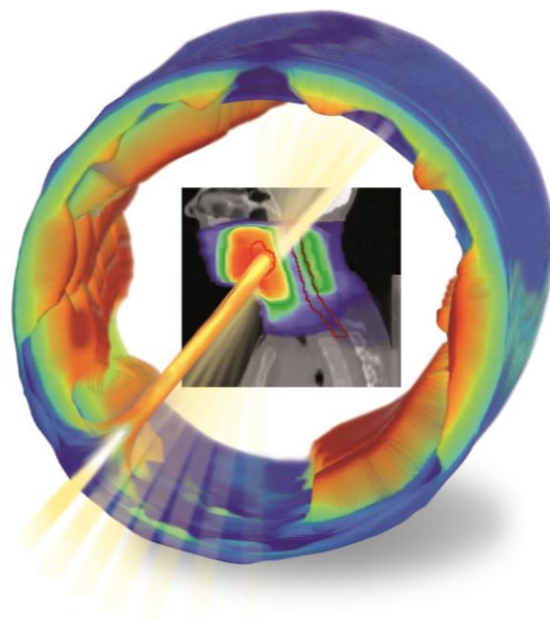


➤ Application for Patient-Specific 3D Plan Verification

2-in-1 Solution for calculation and measurement-based plan verification comprising a full blown dose engine to verify the plan delivery throughout the entire treatment chain, from the TPS calculation to the linac delivery.

The system verifies the plan, the arcs/beams and the control points/segments of the VMAT arcs and IMRT fields. The independent 3D dose reconstruction in the patient anatomy is performed based on the indirect fluence measurement and an advanced collapsed cone algorithm for the most accurate dose calculation on the planning CT.

The comparison to the TPS dose can be done with proven analysis and TPS tools – a common platform for Oncologist and Physicist.



- ✓ Advanced Collapsed Cone dose engine for state of the art accuracy in the dose calculation
 - TPS class algorithm
- ✓ 3D Dose distributions rendered in the patient anatomy, based on original heterogenic planning CT
 - No QA-Plan (hybrid plan) required, verify the original treatment plan
- ✓ Full blown linac modeling with enhanced beam commissioning workspace (machine templates for main linac versions available, auto-modeling tools included for fast commissioning)
 - Independent secondary dose calculation
- ✓ Dose reconstruction in 3D on patient anatomy based on the measurements to display the effect of measured deviations on the dose distribution
 - No dose deformation
 - Independent dose reconstruction
- ✓ Advanced and proven validation tools (DVH, local and global 3D gamma, 3D dose difference)
 - Confidence in the verification result
- ✓ Advanced statistics tools (clinical goals, comparative goals) with pass/fail indication in one look
 - Common platform for Oncologist and Physicist
- ✓ DICOM RT import/export (RTDose, RTPlan, RTStruct, CT)
- ✓ Flexible report generator (pdf, rft, xls, xlsx, docl, mht, image file format)
- ✓ Central database using reliable technology (Microsoft SQL Server)

*For recommended computer and database server requirements, please refer to the specifications provided under the separate section entitled “**System Requirements**”.*

Ordering Information

For complete systems

CS40-002	Dolphin – Online Treatment Monitoring System for Elekta
CS40-003	Dolphin – Online Treatment Monitoring System for Varian

(For Europe only)

CS40-002-E	Dolphin – Online Treatment Monitoring System for Elekta
CS40-003-E	Dolphin – Online Treatment Monitoring System for Varian

(For Korea only)

CS40-002-K	Dolphin – Online Treatment Monitoring System for Elekta
CS40-003-K	Dolphin – Online Treatment Monitoring System for Varian

For existing COMPASS users

Upgrade for existing COMPASS 3.1 (or higher) users:

Hardware and software package containing the Dolphin Transmission Detector and the Dolphin Measurement Console, including the applicable service coverage.

CS40-032	Dolphin – Upgrade for existing COMPASS users for Elekta
CS40-033	Dolphin – Upgrade for existing COMPASS users for Varian

(For Europe only)

CS40-032-E	Dolphin – Upgrade for existing COMPASS users for Elekta
CS40-033-E	Dolphin – Upgrade for existing COMPASS users for Varian

(For Korea only)

CS40-032-K	Dolphin – Upgrade for existing COMPASS users for Elekta
CS40-033-K	Dolphin – Upgrade for existing COMPASS users for Varian

The following packages are available only for a current or previous purchase of a complete Dolphin system, or of a Dolphin – Upgrade package for existing COMPASS users.

For additional complete Dolphin systems

CS40-022 Additional Dolphin system for Elekta

CS40-023 Additional Dolphin system for Varian

(For Europe only)

CS40-022-E Additional Dolphin system for Elekta

CS40-023-E Additional Dolphin system for Varian

(For Korea only)

CS40-022-K Additional Dolphin system for Elekta

CS40-023-K Additional Dolphin system for Varian

For additional Dolphin Detectors with Dolphin Measurement Console

Extend your Online Treatment Monitoring with an *additional* Dolphin detector and an *additional* Dolphin Measurement Console

CS40-422 Additional Dolphin Detector for Elekta with Dolphin Measurement Console

CS40-423 Additional Dolphin Detector for Varian with Dolphin Measurement Console

(For Europe only)

CS40-422-E Additional Dolphin Detector for Elekta with Dolphin Measurement Console

CS40-423-E Additional Dolphin Detector for Varian with Dolphin Measurement Console

(For Korea only)

CS40-422-K Additional Dolphin Detector for Elekta with Dolphin Measurement Console

CS40-423-K Additional Dolphin Detector for Varian with Dolphin Measurement Console

For additional Dolphin Measurement Consoles

Extend your Online Treatment Monitoring with an *additional* Dolphin Measurement Console

CS40-380 Dolphin Measurement Console

DOLPHIN

Media Kit for the Hospital's Marketing use

Media Kit for swift implementation of your promotional campaigns around Dolphin.

The contents of the Kit can be easily customized by you or your media agency with the goal to advertise your new Dolphin Online Treatment Monitoring system. This allows you to differentiate your institution in your local and regional markets and to attract more patients.

The Media Kit contains digital files with generic material that can be adjusted to the hospital's individual needs:

- ✓ Press Release text proposal
- ✓ Letter to the Editor text proposal
- ✓ Facts Sheet
- ✓ Set of photographs and other visuals for use in print and digital communication
- ✓ Set of artwork for poster, billboard or newspaper communication
- ✓ Artwork for flyers and brochures



The Media Kit is included in the purchase of a Dolphin system.

Ordering Information

CS40-901	Dolphin – Media Kit for the Hospital's Marketing use
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DOLPHIN

Accessory Battery / Charger

Ordering Information

CS40-601	Dolphin Battery Charger
CS40-601	Dolphin Two-Battery-Pack

MatrixXX Detectors and Accessories

MatriXX^{Evolution}

2D detector array optimized for fast and accurate verification of rotational delivery IMRT beams versus planned data as well as Linac Machine QA.

The MatriXX^{Evolution} consists of 1020 air vented pixel ionization chambers uniformly distributed among an area of 24 x 24 cm² at 100 cm SDD.

The distance between the individual detectors is 7.6 mm (center to center). The MatriXX^{Evolution} includes a temperature and pressure sensor to perform an automated k(t,p) correction of the chamber signal.

The parallel readout of all 1020 detectors with a minimum sampling frequency of 20 msec enables acquisition of both, individual IMRT segments as well as the total integrated delivered dose.

A gantry angle sensor connected to the device measures the gantry rotation angle directly.

The MatriXX^{Evolution} is easy to set-up and align. It can be operated on the treatment couch (e.g. in a phantom, such as the MULTICube) or in a gantry holder, attached to the LINAC head.

The data transfer to a PC or laptop goes via an Ethernet connection. All necessary cabling is included.



Ordering Information

BS60-500 MatriXX Evolution
for rotational plan verification

BS62-500 l'mRT MatriXX upgrade
to MatriXX Evolution

Note: The l'mRT MatriXX needs to be sent to the factory. Upgrade includes firmware upgrade, inner (electronics) shielding with modified MatriXX housing, gantry angle sensor, calibration.

Software requirements:

The MatriXX^{Evolution} is supported by the following IBA Dosimetry software:

- COMPASS
- former OmniPro-l'mRT software
- former OmniPro-Advance software
- myQA Patients
- myQA Machines
- myQA FastTrack

Technical Specifications

Special components for metal-artifact free imaging.

Number of chambers and type:
1020 air vented ionization chambers

Active area: 24.4 x 24.4 cm²

Sensor layout: matrix in a plane,
arranged in a 32 x 32 grid

Pixel distance: 7.62 mm center-to-center

Chamber size: 4.5 mm diameter x 5 mm height

Sensitive chamber volume: 80 mm³

Effective point of measurement:
3 mm from surface (water equivalent value 3.1 mm)

Nominal sensitivity: 2 nC/Gy

Minimum dose rate: 0.2 Gy/min

Electrometer:
1020 channels
16 TERA chips (each has 64 individual electrometers)
Parallel readout, no dead time

Sampling rate: 20 ms

Charge collection efficiency:
≥ 99.0% at 0.3 mGy/pulse, 300-360 Hz PRF
≥ 98.5% at 0.6 mGy/pulse, 300-360 Hz PRF
≥ 97.0% at 1.1 mGy/pulse, 300-360 Hz PRF

Power supply:
100 - 240 V, 50/60 Hz, power cord for 230 V included
(for 115 V, please order BS61-510)

Deviation from linearity: ≤ 1% if the dose is ≥ 0.02 Gy

Dimensions: 56 cm (L) x 6 cm (H) x 32 cm (W)

Approximate weight: 10 kg

Gantry Angle accuracy: +/- 0.6°

MatriXX^{FFF}

Advanced 2D detector array optimized for fastest and most accurate verification of rotational delivery IMRT beams versus planned data as well as Linac Machine QA in conventional and high-dose-rate beams.

FFF proven: The MatriXX^{FFF} supports currently available and anticipated high-dose-rate delivery systems. Charge collection efficiency greater than 99% at 1.0 mGy/pulse (10MV FFF at 100 cm SDD).

Flexible: Dedicated for high-dose-rate and conventional beams. Supports patient plan verification of IMRT and rotational treatments, as well as machine QA.

Fast: Optimized design for workflow efficiency from setup to measurement analysis.

The MatriXX^{FFF} consists of 1020 air vented pixel ionization chambers uniformly distributed among an area of 24 x 24 cm² at 100 cm SDD. The distance between the individual detectors is 7.6 mm (center to center). The MatriXX^{FFF} includes a temperature and pressure sensor to perform an automated k(t,p) correction of the chamber signal.

The parallel readout of all 1020 detectors with a minimum sampling frequency of 20 ms enables acquisition of both, individual IMRT segments as well as the total integrated delivered dose. A gantry angle sensor connected to the device measures the gantry rotation angle directly.

The MatriXX^{FFF} is easy to setup and align. It can be operated on the treatment couch (e.g. in a phantom like the MULTICube). Data transfer to a PC or laptop goes via an Ethernet connection. All necessary cabling is included.

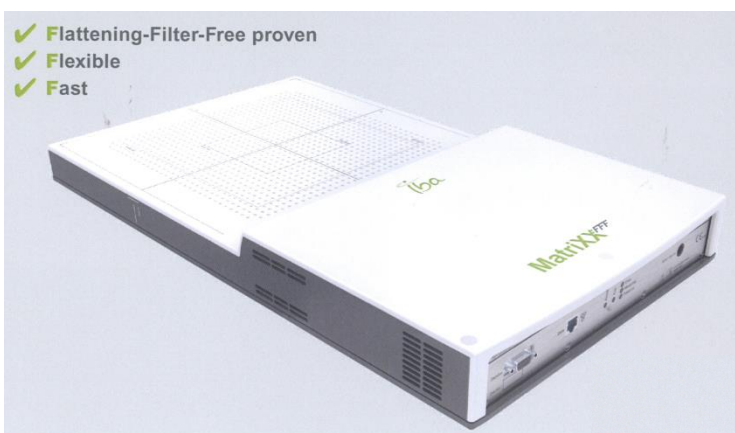
Ordering Information

BS60-600 MatriXX FFF for conventional and high dose rate treatments

Software requirements:

The MatriXX^{FFF} is supported by the following IBA Dosimetry software:

- former OmniPro-ImRT & OmniPro-Advance software
- myQA Patients
- myQA Machines
- myQA FastTrack



- ✓ Flattening-Filter-Free proven
- ✓ Flexible
- ✓ Fast

Technical Specifications

Special components for metal-artifact free imaging.

Number of chambers and type:

1020 air vented ionization chambers

Active area: 24.4 x 24.4 cm²

Sensor layout: matrix in a plane, arranged in a 32 x 32 grid

Pixel distance: 7.62 mm center-to-center

Chamber size: 4.5 mm diameter x 2 mm height

Sensitive chamber volume: 32 mm³

Effective point of measurement:

3 mm from surface (water equivalent value 3.1 mm)

Nominal sensitivity: 1.4 nC/Gy

Minimum dose rate: 0.02 Gy/min

Effective point of measurement:

6 mm from surface
(water equivalent value 6.4 mm)

Electrometer:

1020 channels
16 TERA chips (each has 64 individual electrometers)
Parallel readout, no dead time

Sampling rate: 20 ms

Charge collection efficiency:

= 99.0% at 1.0 mGy/pulse, 300 Hz PRF
= 98.5% at 2.0 mGy/pulse, 300 Hz PRF

Deviation from linearity:

= 1% if the dose is = 0.15 Gy

Power supply:

100 - 240 V, 50/60 Hz, power cord for 230 V included

Dimensions: 56 cm (L) x 6 cm (H) x 32 cm (W)

Approximate weight: 10 kg

Gantry Angle accuracy: +/- 0.6°

Additional Gantry Angle Sensor for existing MatriXX users

MatriXX Gantry Angle Sensor

Precise measurements of Linac rotation for RapidArc® / VMAT

- ✓ Measure dose per frame as a function of the gantry angle
- ✓ Automated correction minimizing angular dependency



Ordering Information

BS64-000

Additional Gantry Angle Sensor for existing MatriXX users

BS64-100

Base Plate for Gantry Angle Sensor

Adapter plate with bayonet coupling to be attached on the linac. The base plate can be attached with double-sided adhesive pads.

BS64-110

Base Plate Cover for Gantry Angle Sensor



Options for MatriXX

Ordering Information

BS69-000

Set of RW3 build-up material, 300 mm x 300 mm

Consisting of:

- 4 x 10 mm
- 1 x 5 mm
- 2 x 2 mm, and
- 1 x 1 mm plates

BS70-000

Set of RW3 backscatter plates, 300 mm x 300 mm

Consisting of:

- 8 x 10 mm
- 1 x 5mm
- 2 x 2 mm
- 1 x 1 mm plates
- as well as a backscatter plate holder

IMRT Phantoms

MULTICube Phantoms



Ordering Information

BS50-000

MULTICube

Advanced Phantom for use with MatriXX to analyze and validate rotational IMRT delivery.

Plastic Water® phantom designed for dynamic delivery to the MatriXX that includes:

- Unique Plastic Water® with 4(four) 6cm build-up slabs and 1(one) 10cm with MatriXX insert
- Customized locking pins to hold the MatriXX fixed within the phantom
- Removable film cassette with auto-registration
- Modular design for custom depth, including configuration for QA of posterior lesions
- Engraved cross-hairs on three sides for easy alignment for CT and MVCT
- Carbon fiber brackets to lock the phantom configuration
- Flat sides for use in sagittal or coronal configuration
- Completely metal free design for reproduction of quality CT set

Technical Information:

- | | |
|------------------------------------|----------------------|
| – Outer dimensions: | 31.4cm x 34cm x 34cm |
| – Approximate weight: | 33kg |
| – Approximate weight with MatriXX: | 43kg |
| – Film cassette weight: | 4.1kg |
| – Within 0.5% of true water dose | |

BS51-000

MULTICube Lite

Condensed Phantom for use with MatriXX to analyze and validate rotational IMRT delivery.

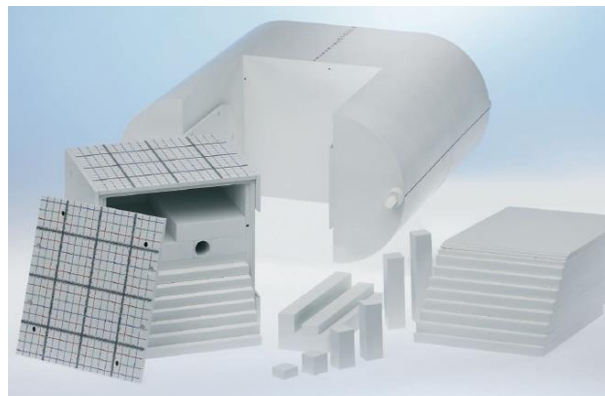
Plastic Water® phantom designed for dynamic delivery to the MatriXX that includes:

- Unique Plastic Water® with 2(two) 6cm build-up slabs and 1(one) 10cm with MatriXX insert
- Customized locking pins to hold the MatriXX fixed within the phantom
- Removable film cassette with auto-registration
- Modular design for custom depth, including configuration for QA of posterior lesions
- Engraved cross-hairs on three sides for alignment for CT and MVCT
- Carbon fiber brackets to lock the phantom configuration
- Flat sides for use in sagittal or coronal configuration
- Completely metal free design for reproduction of quality CT set

Technical Information:

- | | |
|------------------------------------|----------------------|
| – Outer dimensions: | 31.4cm x 34cm x 22cm |
| – Approximate weight: | 19.8kg |
| – Approximate weight with MatriXX: | 29.8kg |
| – Film cassette weight: | 4.1kg |
| – Within 0.5% of true water dose | |

Phantoms for IMRT Verification



Ordering Information

BS40-000

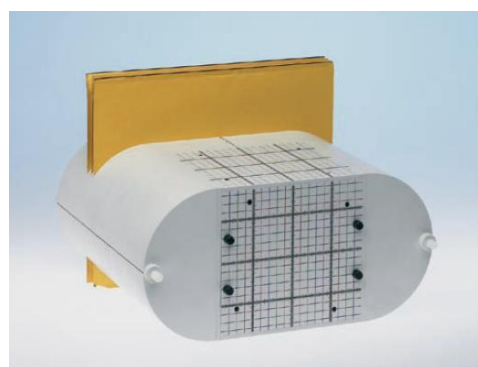
Universal l'mRT Phantom

For calibration and verification of the treatment planning system and CT simulator with regard to the Hounsfield Units (HU).

Universal, water equivalent (RW3) IMRT phantom for multiple film measurements and the verification of the absolute dose.

The innovative design allows for both universal body as well as head and neck and stereotactic applications (Item number BS41-000).

Includes adapter for Farmer type (FC65-P/G) ionization chamber.

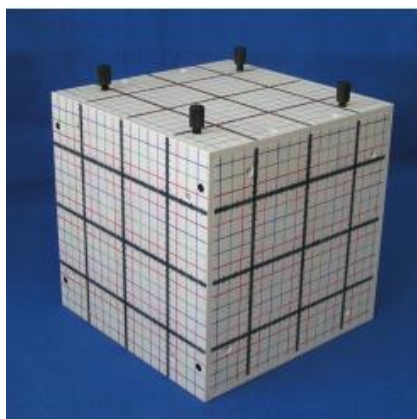


- Simultaneous exposure of up to 15 large films in universal body shaped section
- Three integrated markers for convenient film-TPS alignment and registration
- Simultaneous exposure of up to 15 films with a maximum size of 16 x 16 cm in the modular, removable cubic phantom
- Flexible positioning of ionization chambers for absolute dosimetry verification measurements
- Size of complete phantom: 33 cm (L) x 36 cm (W) x 18 cm (H)
- Size of modular cubic phantom part: 18 cm (L) x 18 cm (W) x 18 cm (H)
- Phantom material: RW3 (polystyrene), 1.045 g/cm³ density
- Film thickness compensation plates for cubic phantom:
 - 16 x 10 mm
 - 1 x 1 mm
 - 2 x 2 mm
 - 1 x 5 mm
- Two lateral stray bodies that can be mounted on all sides of the cubic phantom
- PMMA carriage and levelling plate (33 cm x 44 cm x 1cm)
- Carrying case

Ordering Information

BS41-000

Cubic Phantom for head and neck and stereotactic applications



Dimensions (outer): 18 cm x 18 cm x 18 cm

Film size: 16 cm x 16 cm

Film spacing: minimum 1 cm

Number of films: up to 15

Flexible positioning of ionization chambers for absolute dosimetry verification measurements

Geometry: transversal, coronal or sagittal orientation

- Compensation of film thickness including the following distance plates:
 - 16 x 10 mm
 - 1 x 5 mm
 - 2 x 2 mm
 - 1 x 1 mm
- Including carrying case

BS40-500

Upgrade from Cubic Phantom (BS4-000) to Universal I'mRT Phantom (BS40-000)

Including:

- Two lateral stray bodies that can be mounted on all sides of the cubic phantom
- Ionization chamber insert for FC65-P/G, PTW 0.6 ccm and NE 0.6 ccm "Farmer" type chambers
- PMMA carriage and levelling plate (33 cm x 44 cm x 1 cm)
- Carrying case

• Lateral scattering bodies



BS41-500

Adapter Plate for Cubic Phantom for customized Gafchromic films 15 x 15 cm



Plate dimensions:
16 cm x 16 cm

Options for I'mRT Phantom / Cubic Phantom

Ordering Information

BS42-000

Lateral stray bodies (2 pcs.)



Can be mounted on all sides of the cube

Width of the cubic phantom with stray bodies: 36 cm

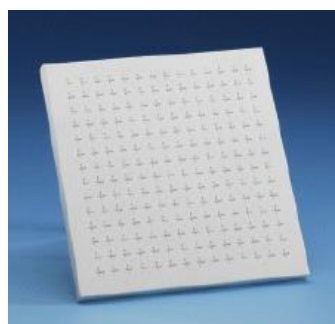
BS43-000

CT localizer plates (6 pcs.) for prismatic TLD rods



BS44-000

TLD plate insert for prismatic TLD rods

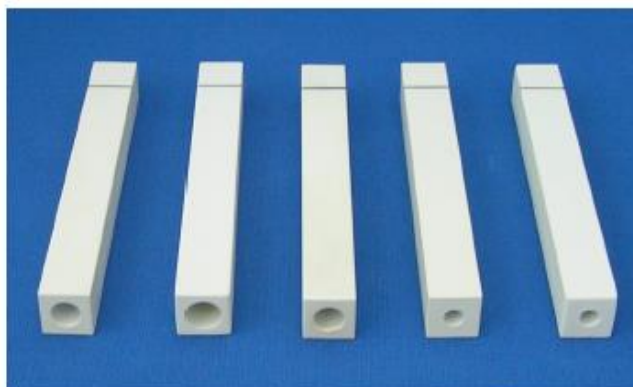


Up to 196 TLD detectors (rods 1 x 6 mm diameter) on each side, 1 cm spacing

Note:

Please provide data sheet with exact dimensions of the TLD detectors with order.

Ionization Chamber Inserts for Universal I'mRT Phantom and/or Cubic Phantom



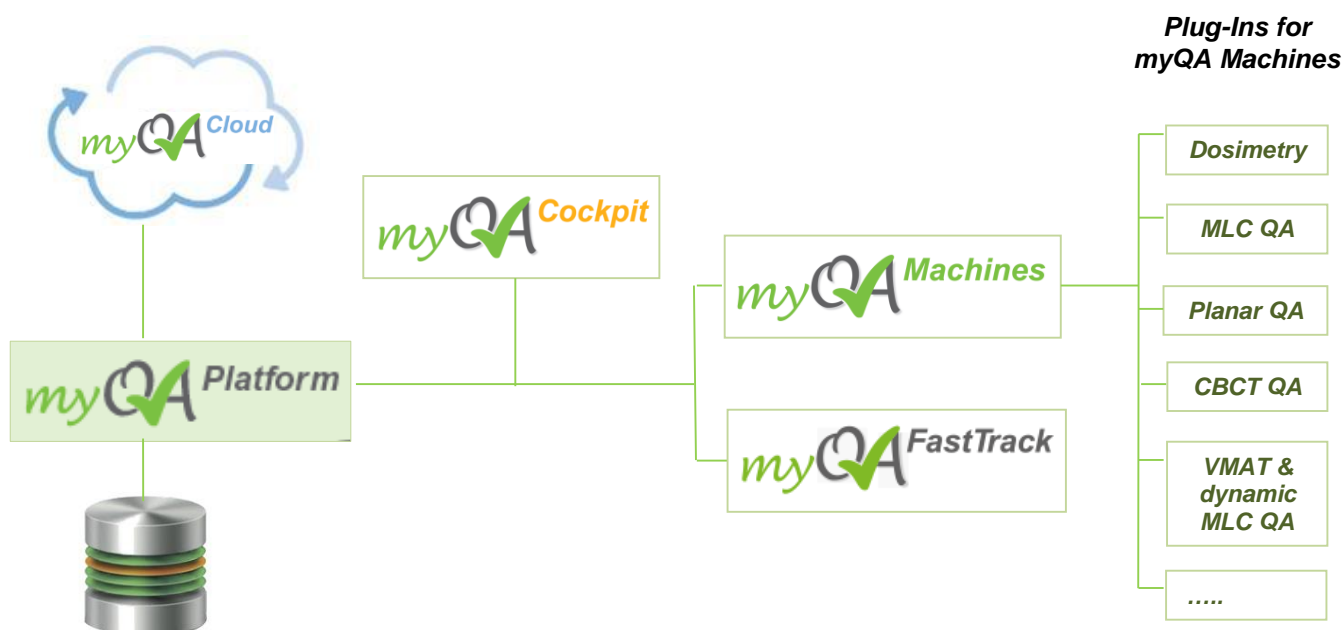
Auxiliary Inserts for ionization chamber for Farmer and Compact chamber types

Ordering Information

BS45-000	Ionization chamber insert for compact chamber CC01
BS46-000	Ionization chamber insert for compact chamber CC04
BS47-000	Ionization chamber insert for compact chamber CC13
BS47-100	Ionization chamber insert for RK chamber
BS47-200	Ionization chamber insert for compact chamber CC13-S
BS48-000	Ionization chamber insert for FC65-G/P, PTW 0.6 ccm and NE 0.6 ccm "Farmer" type chambers
BS48-100	Ionization chamber insert for FC23-C "Farmer" type chambers
BS49-000	Ionization chamber insert for PTW 0.3 ccm semiflex chamber type 31003
BS49-001	Ionization chamber insert for PTW chamber type 31002 and 31010 and 233642 0.125 ccm
BS49-100	Ionization chamber insert for Exradin A12 chamber
BS49-200	Ionization chamber insert for Exradin A14 chamber
BS49-201	Ionization chamber insert for Exradin A14SL chamber
BS49-300	Ionization chamber insert for PTW chamber type 31009
BS49-400	Ionization chamber insert for PTW chamber type 23332, 0.3 ccm
BS49-500	Ionization chamber insert for Exradin A16 chamber
BS49-600	Ionization chamber insert for Exradin AISL chamber
BS49-700	Ionization chamber insert for PTW chamber type 31006 and 31014
BS49-720	Ionization chamber insert for PTW chamber type 31015 (31009)
BS49-730	Ionization chamber insert for PTW chamber type 31016
BS49-800	Ionization chamber insert for Capintec PR05

Machine QA

Your complete Machine QA solution



StarTrack*



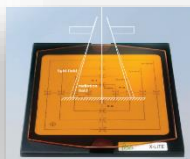
MatriXX Evolution



MatriXX FFF



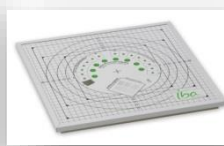
Energy
Constancy
Option



X-Lite



Phantoms for
Quality
Assurance



Primus L



Round CT &
RTPS QA
Phantom

**Upcoming
phantoms
for QA**



Software application for your complete Machine QA

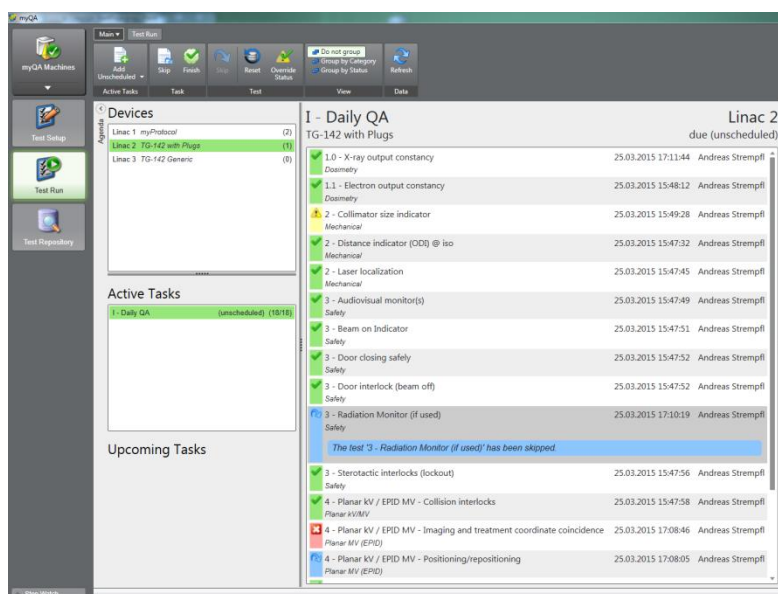
1 Test Setup



2 Test Run



3 Test Archive



myQA Machines is the software module that provides a complete set of functions to plan, perform, analyze, and document quality assurance of treatment units, imaging devices and their accessories, based on customizable protocols.

- Protocol based machine QA (default protocol: TG-142)
- Customizable protocols and tolerances
- Full coverage of tests related to dosimetry, safety, medical imaging, MLC QA, etc.
- Generic tests with customizable pass / fail criteria can be used for definition, scheduling, tracking and reporting of any QA tasks
- Flexible scheduling tool to manage your tasks, resources and time
- Consolidated printing and reporting of all QA results
- Interface to **myQA Cockpit** for quick and easy access to all QA results through web browser.
- Comprehensive analysis, archiving and reporting tools.

Includes plug-in for dosimetry tests (IBA Article Number: MQ03-100) to perform automated dosimetry tests with the StarTrack* or with the MatriXX detectors.

Ordering Information (myQA Platform is required)

MQ03-000	myQA Machines
UQ03-000	Upgrade from OmniPro-Advance to myQA Machines
UQ03-200	Upgrade of Siemens MLC QA to myQA Machines

Optional

MQ00-200	myQA FastTrack
MQ01-000	myQA Cockpit
MQ00-100	myQA Cloud
MQ03-XXX	Plug-Ins for myQA Machines

Additional Licenses

AQ03-001	Additional license for myQA Machines
AQ03-005	Additional 5 licenses for myQA Machines
AQ03-010	Additional 10 licenses for myQA Machines

Plug-Ins for **myQA Machines**

Ordering Information

MQ03-100

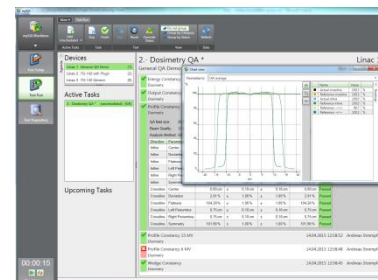
Dosimetry Plug-In for myQA Machines

Plug-In for **myQA Machines** to perform automated Dosimetry tests with the **StarTrack*** or **MatriXX** detectors.

- Acquisition of all key beam parameters in just one shot (dose output, profile analysis, energy verification)
- Analysis of main axis and diagonals (field size, symmetry, flatness, center, penumbra, light field)
- Import of previously measured data
- Import of water phantom scans (e.g. as reference data or for annual QA)
- Data analysis and data comparison tools

Full integration into **myQA Machines** for common set-up, protocol-based test management (default protocol: TG-142) and consolidated reporting.

Results can be exported to *Reports*, saved in the **myQA** database, benchmarked in the **myQA Cloud**, and are shown in the **myQA Cockpit**.

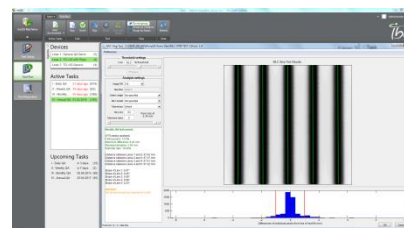


MQ03-200

MLC QA Plug-In for myQA Machines

Plug-In for **myQA Machines** to perform automated MLC stripe tests (also known as "picket fence test").

- EPID images and films with radiation stripe patterns can be analyzed to determine leaf position accuracy as well as MLC transmission characteristics. It can identify if any leaf is not in tolerance (and what leaf number failed). Every pixel of every strip is fitted to a modified Lorentzian curve in order to achieve results with sub-pixel accuracy. The MLC strip test can be used to validate MLC encoder operation within 0.3 mm, ensuring accurate treatment log analysis.
- Full integration into myQA Machines for common setup, protocol based test management (default protocol: TG-142) and consolidated reporting.
- Results can be exported to Reports, saved in the **myQA** database, benchmarked in the **myQA Cloud** and are shown in the **myQA Cockpit**.



Additional Licenses

AQ03-201
AQ03-205
AQ03-210

Additional license for myQA Machines, MLC QA Plug-In
Additional 5 licenses for myQA Machines, MLC QA Plug-In
Additional 10 licenses for myQA Machines, MLC QA Plug-In

Ordering Information

MQ03-300

CBCT QA Plug-In for myQA Machines

Plug-In for **myQA Machines** to perform automated imaging QA for CT and CBCT including:

- Contrast
- Contrast to Noise Ratio
- Uniformity
- Overall (Intrinsic) Uniformity
- HU deviation
- Spatial resolution

Compatible with all common imaging phantoms:

- Catphan 503 (Elekta IGRT linacs)
- Catphan 504 (Varian IGRT linacs)
- Catphan 600
- Gammex 464 ACR Accreditation Phantom (no slice width)
- CIRS 610 AAPM CT Performance Phantom (no slice width or spatial resolution)
- User-customizable additions

Full integration into **myQA Machines** for common setup, protocol-based test management (default protocol: TG-142) and consolidated reporting.

Results can be exported to *Reports*, saved in the **myQA** database, benchmarked in the **myQA Cloud**, and are shown in the **myQA Cockpit**.

Additional Licenses

Additional license for myQA Machines, CBCT QA Plug-In

Additional 5 licenses for myQA Machines, CBCT QA Plug-In

Additional 10 licenses for myQA Machines, CBCT QA Plug-In



- Image scaling
- Slice width

AQ03-301

AQ03-305

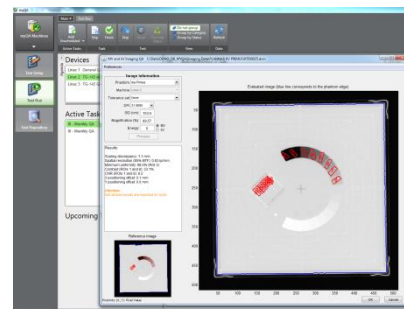
AQ03-310

MQ03-400

Planar Imaging QA Plug-In for myQA Machines

Plug-In for **myQA Machines** to perform automated QA for planar imaging (kV and MV).

- All imaging QA plug-ins are fully automatic with all calculations performed in 5 seconds or less.
- Compatible with all common imaging phantoms:
 - IBA DIGI-13
 - IBA Primus L
 - SNC MV and kV Image-Pro phantoms
 - Leeds TOR 18FG (included with IGRT linacs)
 - Las Vegas (no spatial resolution, included with linacs)
 - Standard Imaging QC-3
 - Standard Imaging QC-kV1
 - PTW EPID QC (no positioning or scaling)
 - User-customizable additions
- Full integration into **myQA Machines** for common setup, protocol based test management (default protocol: TG-142), and consolidated reporting.
- Results can be exported to *Reports*, saved in the **myQA** database, benchmarked in the **myQA Cloud** and are shown in the **myQA Cockpit**.

Additional Licenses

Additional license for myQA Machines, Planar Imaging QA Plug-In

Additional 5 licenses for myQA Machines, Planar Imaging QA Plug-In

Additional 10 licenses for myQA Machines, Planar Imaging QA Plug-In

AQ03-401

AQ03-405

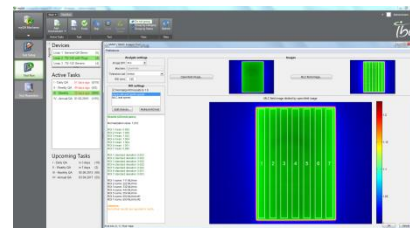
AQ03-410

Ordering Information

MQ03-500

VMAT & dynamic MLC QA Plug-In for myQA Machines

Plug-In for **myQA Machines** to perform automated dynamic MLC QA.



Automatic analysis of test for verifying accurate dose delivery using different dose rates, gantry speeds, and MLC leaf speeds. These tests ensure that changing dose rates, gantry speeds, and leaf speeds during delivery do not adversely affect the delivered dose. Delivery files are available for Varian, while Elekta users can also create delivery files to perform these tests quickly and accurately.

Full integration into **myQA Machines** for common setup, protocol based test management (default protocol: TG-142) and consolidated reporting.

Results can be exported to reports, saved in the **myQA** database, benchmarked in the **myQA Cloud** and are shown in the **myQA Cockpit**.

Additional Licenses

AQ03-501

Additional license for myQA Machines, VMAT & dynamic MLC QA Plug-In

AQ03-505

Additional 5 licenses for myQA Machines, VMAT & dynamic MLC QA Plug-In

AQ03-510

Additional 10 licenses for myQA Machines, VMAT & dynamic MLC QA Plug-In

MQ03-600

Iso Check Plug-In for myQA Machines

Plug-In for **myQA Machines** to perform automated isocenter tests (also known as "Winston-Lutz test") based on EPID or film images.

- Offsets between radiation field and phantom centers
- 2D and 3D offset calculations
- Supports most Winston-Lutz phantoms (cubes)
- Supports IBA Cylindrical Phantom

Full integration into **myQA Machines** for common setup, protocol based test management (default protocol: TG-142) and consolidated reporting.

Results can be exported to reports, saved in the **myQA** database, benchmarked in the **myQA Cloud** and are shown in the **myQA Cockpit**.

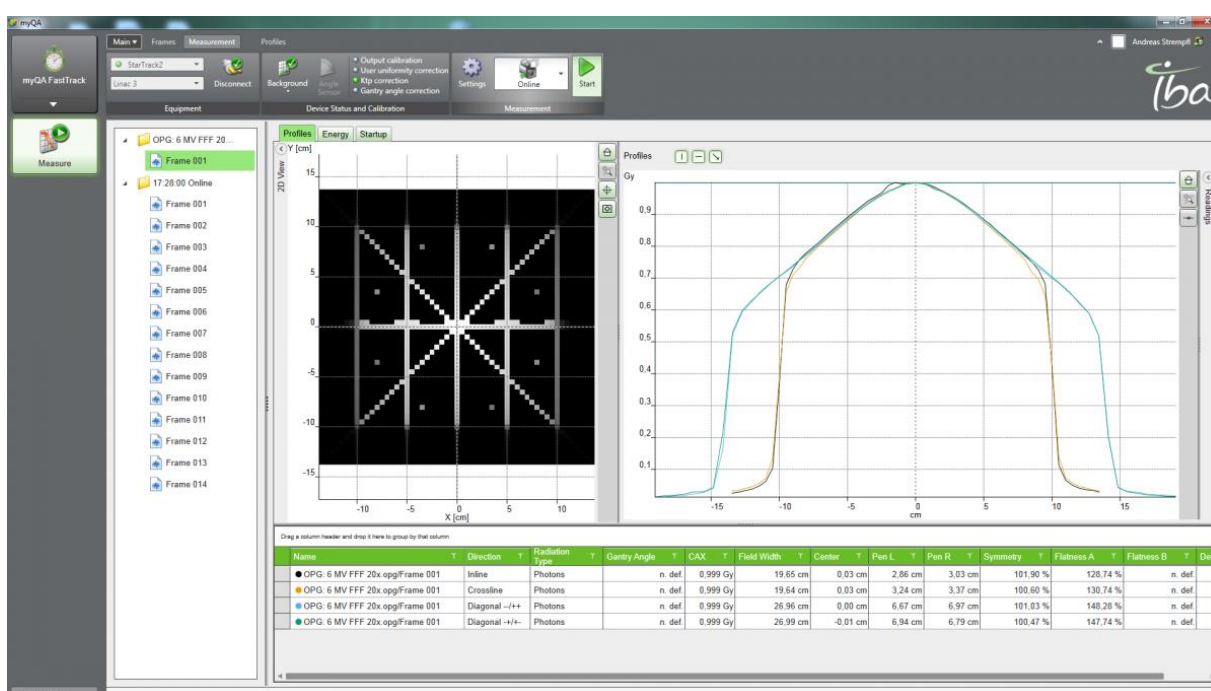
Additional Licenses

AQ03-601

Additional license for myQA Machines, VMAT & dynamic MLC QA Plug-In

myQA FastTrack

Software application for fast measurement and data analysis with your StarTrack* or MatriXX detector



- Connect to your StarTrack* or MatriXX detector
- Measure
- Instant display of results and real-time analysis (e. g. for beam steering) such as:
 - Dose output
 - Energy check with energy verification plates
 - Profile analysis according to standard protocols (symmetry, flatness, penumbra etc.)
 - Profile comparison
 - Time based measurements (e. g. for analysis of start-up behavior)

The application is fully integrated into the **myQA** platform for common set-up, calibrations and interfacing with **myQA Patients** and **myQA Machines**.

Measured data can be imported and exported via ASCII files.

Per installation.

Ordering Information (myQA Platform is required)

MQ00-200	myQA FastTrack
MQ00-201	myQA FastTrack for existing OmniPro-I'mRT / Advance installations

Related Detectors and Accessories

BS80-100	StarTrack including Energy Verification Plates
BS60-500	MatriXX Evolution
BS60-600	MatriXX FFF

StarTrack*

2D Comprehensive Daily Linac QA Device

Advanced pixel ionization chamber based linac QA device for periodic quality assurance of a variety of linac parameters.

By means of build-up plate, energy constancy checks for photon & electron beams are possible.

The StarTrack* is easy to set-up and align (treatment couch, or optionally, gantry mount). Data transfer to a PC or laptop goes via an Ethernet connection. All necessary cabling is included.



Package includes:

- Energy verification plates for photon and electron energies (Item Number BS71-300)
- Fast and easy StarTrack user uniformity calibration. In addition to the existing "Factory Co60 Uniformity Calibration", the StarTrack user can apply a user uniformity calibration on-site.
- 30m cabling (data transfer to PC or laptop is via Ethernet)
- Power supply: 100 - 240V, 50/60 Hz, one power cord included for either 230V power plug, USA, UK, Australia or China



Technical Specifications of StarTrack* detector:

Sensor dimensions:	27cm x 27cm
Number of detectors:	453
Distance between Detectors:	5 mm (7 mm along diagonals)
Field Size Determination Accuracy:	0.5 mm
Detector diameter:	3.0 mm
Detector Volume:	0.035 ccm
Key Applications:	daily, weekly, monthly QA; symmetry, flatness, primary and diagonal axes beam output, energy constancy (option) of x-ray and electron beams
Interfaces:	Windows Excel via ASCII (ASCII in general)
Intrinsic Buildup:	3 mm
Approx. Weight:	10 kg

Energy Verification Plates:

For the verification of energy constancy of x-ray and electron beams. Consisting of two energy verification plates incorporating unique attenuating materials in 8 specific locations:

2cm diameter recesses filled with varying material and thickness attenuator, centered above the corresponding chambers of the StarTrack for fast energy constancy verification.

Material:	RW3
Area:	30cm x 30cm
Thickness:	1 cm for electron beams; 5 cm for x-ray beams, each with 8 recesses of 1cm depth.

Attenuators for energy check:
8 cylinders of Ti or Cu or Pb for electron
and x-ray beams located in the circular
recesses of the energy verification plates.

Location of recesses/attenuators:
approximately equidistant, symmetrically
positioned approximately 8.5 cm from the
center of the plates.

Ordering Information

BS80-100	StarTrack* including Energy Verification Plates, for my QA
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MatriXX Detectors for Machine QA

MatriXX^{Evolution}

2D detector array optimized for fast and accurate verification of rotational delivery IMRT beams versus planned data as well as Linac Machine QA.

For a full description of the MatriXX Evolution detector, please refer to the specifications provided under the separate section entitled “Plan Verification”.



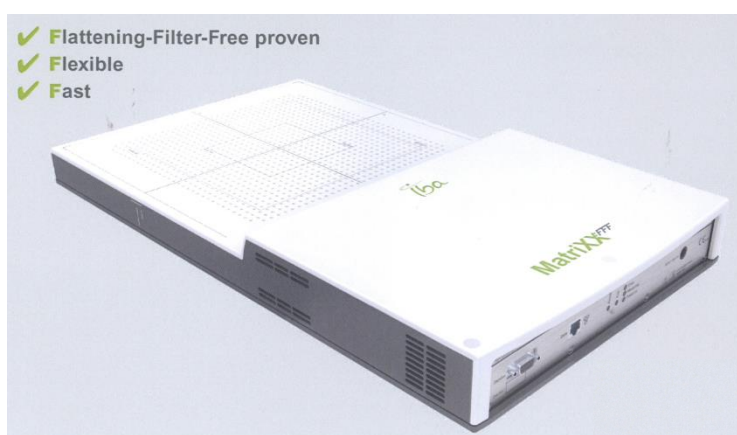
Ordering Information

BS60-500	MatriXX Evolution for rotational plan verification
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MatriXX^{FFF}

Advanced 2D detector array optimized for fastest and most accurate verification of rotational delivery IMRT beams versus planned data as well as Linac Machine QA in conventional and high-dose-rate beams.

For a full description of the MatriXX FFF detector, please refer to the specifications provided under the separate section entitled “Plan Verification”.



Ordering Information

BS60-600	MatriXX FFF for conventional and high dose rate treatments
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Please see also the separate section entitled “Gantry Mount Solutions for MatriXX and StarTrack* Detectors”.

Options for **StarTrack*** / **MatriXX**

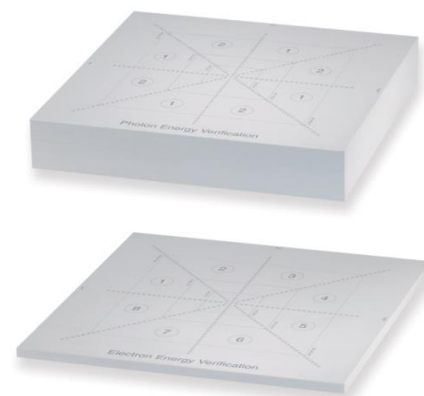
Ordering Information

BS71-000

Energy Constancy Option for **StarTrack*** / **MatriXX**

For the verification of energy constancy of x-ray and electron beams.

Comprising of two energy verification plates incorporating unique attenuating materials in specific locations above the corresponding chambers of the **StarTrack*** or **MatriXX** for fast energy constancy verification.



BS69-000

Set of RW3 build-up material, 300 mm x 300 mm

Consisting of:

- 4 x 10 mm,
- 1 x 5 mm,
- 2 x 2 mm, and
- 1 x 1 mm plates

BS70-000

Set of RW3 backscatter plates, 300 mm x 300 mm

Consisting of:

- 8 x 10 mm,
- 1 x 5mm,
- 2 x 2 mm,
- 1 x 1 mm plates
- as well as a backscatter plate holder

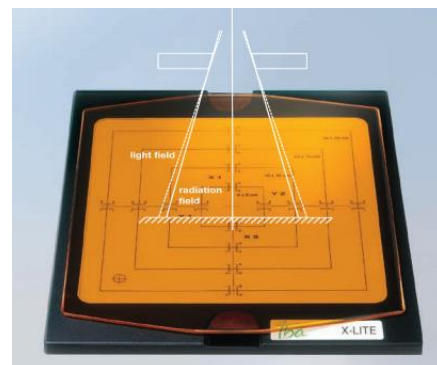
Light Field Alignment Check

Ordering Information

994-000

X-LITE

X-LITE is used to check light and radiation field coincidence. It consists of a fluorescent plate, active area 20x20 cm with scales. The plate is activated by exposure to ionising radiation, which produces fluorescence with a lifetime of few minutes. A removable red filter over the active surface protects the fluorescent plate from activation by ambient light or by the gantry field light. After irradiation the fluorescent response can be compared with the set-up field size on the scale.



Phantoms for Quality Assurance



Ordering Information

SA20-000

Light vs. Radiation Field Verification phantom including base plate

Consisting of orthogonally mounted cube faces accommodating film with metal markers for radiation field edge detection. For constancy checks of medical electron accelerators or gamma sources according to IEC/TR 60977.

The base plate is designed for an exact levelling of the phantom independent of the surface used to support the phantoms.

SA27-000

Base plate for cubic phantom

Easy to adjust in the radiation field and also on the horizontal level with the aid of a built-in water level.

SA21-000

Disk phantom for isocenter check*

For determination of the isocentric accuracy. The film is held between the two perspex disks and a tool provided defines the center of crosshairs on the film.

SA22-000

Cylindrical phantom for isocenter & monitor check *

For checking the constancy of the calibration of the dosimetry system in dependence on the gantry rotation by using an adapter for existing chambers. Adapters for checking the isocenter and dose constancy at any angle (especially for Winston-Lutz test) are included in the system.

*** Note:** The use of the disk and cylindrical phantoms require the **Base Plate for cubic phantom** with levelling mechanism, SA27-000.

VD0203520

Test device Primus L

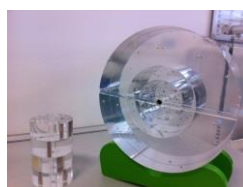
Suitable for image quality checks at planar kV and MV (EPID) units.

Please refer to the specifications provided under the separate section entitled **"Medical Imaging in Radiotherapy"**.

**Coming
Soon!**

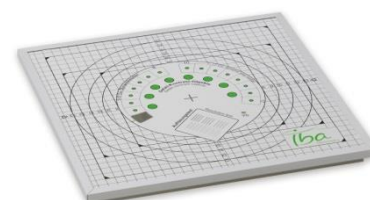
IBA CT & CBCT QA Phantom

(Details to follow.)



Phantoms for Quality Assurance

	Base Plate	Cubic Phantom	Disk Phantom	Cylindric Phantom
Material:	PMMA	PMMA	PMMA	PMMA
Weight:	2.5 kg	8.5 kg	2.3 kg	2.2 kg
Size:	300 mm (L) x 300 mm (W) x 25 mm (H)	300 mm (L) x 300 mm (W) x 310 mm (H)	200 mm (L) x 200 mm (W) x 260 mm (H)	200 mm (L) x 200 mm (W) x 210 mm (H)
Build-up layer:	–	10 mm	–	–
Thickness of disks:	–	–	20 mm	–
Diameter:	–	–	200 mm	100 mm
Measuring depth:	–	–	–	R = 50 mm



Machine QA

Round CT and RTPS QA phantom

Ordering Information

BS41-200

Round CT and RTPS QA phantom

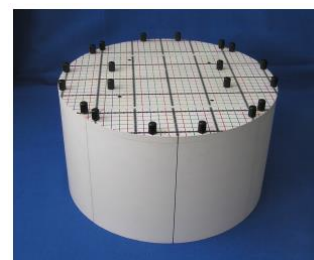
for calibration and verification of the treatment planning system and CT simulator with regard to the Hounsfield Units (HU).

Including:

- Cubic phantom for head and neck and stereotactic applications (item number BS41-000)
- RW3 adapter shells for upgrading the cubic phantom to a round geometry (item number BS41-300)
- Transportation case

Note:

Inhomogeneous inserts have to be ordered extra. Please see Order Information below.



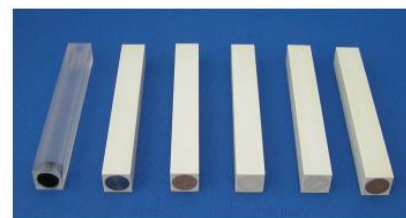
BS41-290

Set of inhomogeneous inserts for round CT and RTPS QA phantom

Hollow inserts with 1.7 cm diameter and 16 cm length embedded in 2 x 2 cm RW3 block.

Consisting of:

- Insert with **Water** (to be filled with water prior to measurement)
- **Lung** with a physical density of 0.20 g/ccm and electron density rel. to water 0.194
- **Adipose** with a physical density of 0.97 g/ccm and electron density rel. to water 0.946
- **Muscle** with a physical density of 1.06 g/ccm and electron density rel. to water 1.048
- **Bone** with a physical density of 1.640 g/ccm and electron density rel. to water 1.544
- **Titanium** grade 2 with a physical density of 4.51 g/ccm



Upgrade of cubic head and neck phantom* to round CT and RTPS phantom

For customers who already have the cubic head and neck phantom (Item Number BS41-000) – either with the I'mRT phantom (Item Number BS40-000) or the stand-alone cubic phantom (Item Number BS41-000).

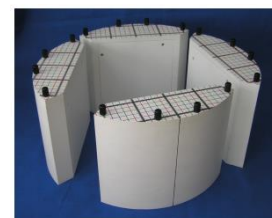
Ordering Information

BS41-300

RW3 adapter shells for upgrading the cubic phantom to a round geometry

Note:

Inhomogeneous inserts have to be ordered extra. Please see above Order Information.



RW3 adapter shells

SA23-000

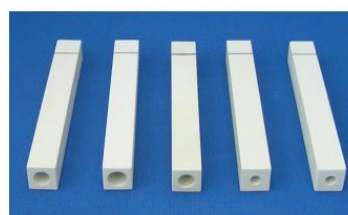
Adapter for CC13

SA25-000

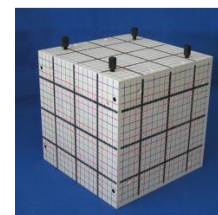
Adapter for FC65-P or FC65-G "Farmer" type ion chamber

SA26-000

Adapter for FC23-C



Ionization chamber adapter inserts



Cubic Head & Neck Phantom

Gantry Mount Solutions

for **MatrixXX** and
StarTrack* Detectors

Gantry Mount Solutions for MatriXX and StarTrack* Detectors

A complete gantry mount consists of an (advanced) holder and a gantry fixture.



Ordering Information

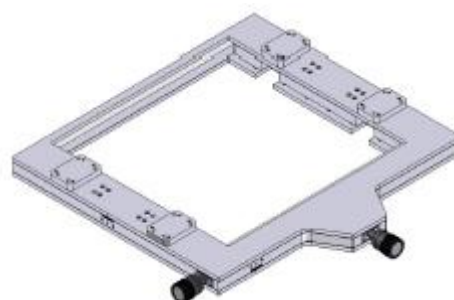
BS65-000

Advanced holder for MatriXX for mounting to accelerator gantry

Including **adjustable** XY table with high precision knobs for additional flexibility of extremely accurate positioning.

Very fine lateral (relative to the radiation field) and angular (about the central axis of the beam) adjustment of the MatriXX.

Note: A gantry fixture is required for attachment to the accelerator. Please see Order Information in the following pages.



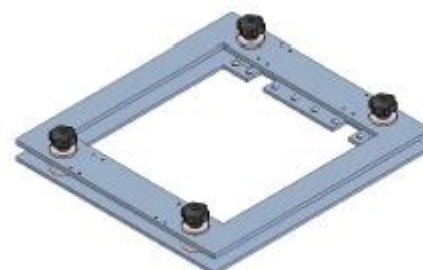
BS66-000

Holder for StarTrack* and MatriXX for mounting to accelerator gantry

Including non-adjustable XY table.

The center of the StarTrack* / MatriXX can be adjusted manually to the radiation field axis.

Note: A gantry fixture is required for attachment to the accelerator. Please see Order Information below. This holder cannot be used with the 76 cm SSD fixture for Varian Clinac (Item Number BS68-300).



Ordering Information

BS67-100

Gantry fixture for StarTrack* / MatriXX gantry holder at 100 cm SSD for Siemens Linac



BS67-200#001

Gantry fixture for StarTrack* / MatriXX gantry holder at 100 cm SSD for Elekta Linac



BS67-300

Gantry fixture for StarTrack* / MatriXX gantry holder at 100 cm SSD for Varian Clinac



BS68-100

Gantry fixture for StarTrack* / MatriXX gantry holder at 76 cm SSD for Siemens Linac



BS68-200#001

Gantry fixture for StarTrack* / MatriXX gantry holder at 76 cm SSD for Elekta Linac



BS68-300

Gantry fixture for StarTrack* / MatriXX gantry holder at 76 cm SSD for Varian Clinac



Note: The gantry fixture to Varian Clinac at 76 cm SSD fixture cannot be used with the standard holder (Item Number BS66-000).

Film. Dosimetry

Hardware

Ordering Information

FD20-000

Film Digitizer VIDAR model DosimetryPro Advantage (Red)

Red LED film digitizer with a 32 bit data path and outputting 16 bits of grayscale data.
PC interface via USB 2.0

FD17-000

Step table for film scanner calibration – uncalibrated

FD17-100

Step table for film scanner calibration – calibrated

FD17-600

Gafchromic EBT2 films, 15 x 15 cm size, 25 sheets per box

FD17-610

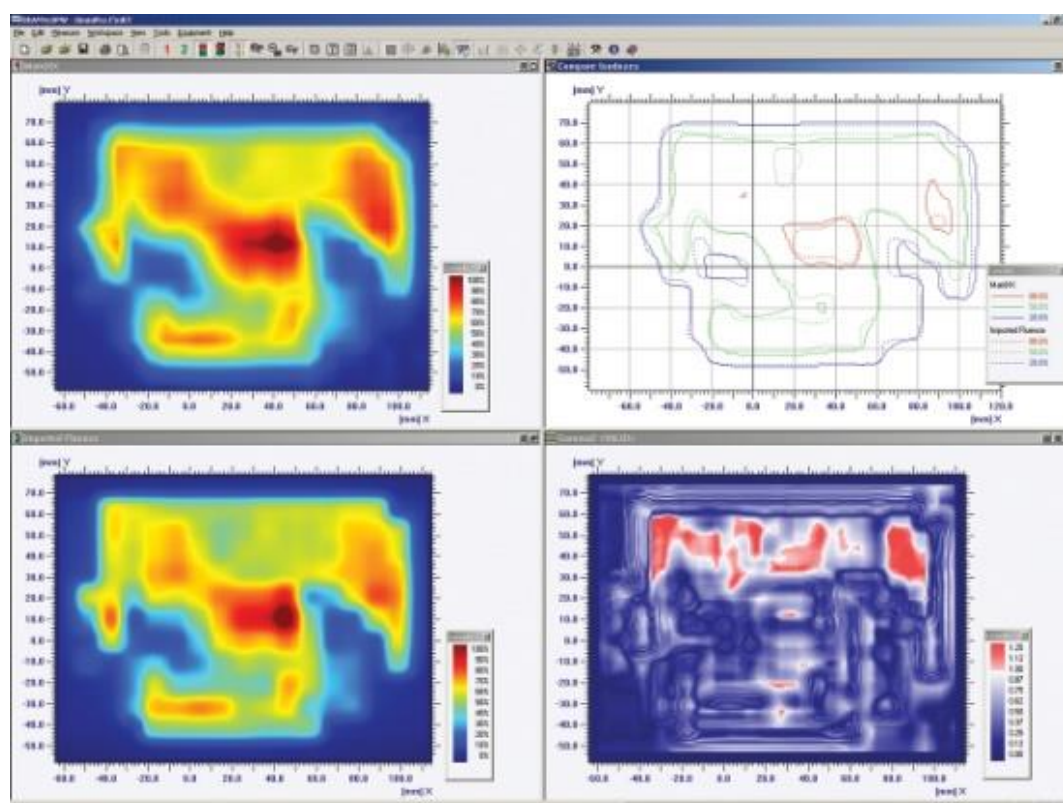
Gafchromic EBT3 films, 15 x 15 cm size, 25 sheets per box

Software

OmniPro-I'mRT analysis software for film and basic machine QA

General Features:

- Extensive and flexible import / export functionalities
- Film panel for scanning, calibration and analysis for film dosimetry
- License for installation of OmniPro-I'mRT on one workstation



DICOM Import Functions:

- Import of planned 2D and 3D data from all TPS supporting DICOM RT and RTOG formats
- Import of EPID data via DICOM
- Interface to DICOM compatible scanners (e.g. Kodak CR) via import of DICOM CR files

Data Analysis:

- Excellent visualization of 1D, 2D and 3D data including profiles, isodose contours and 2D/3D IMRT distributions
- Complete IMRT verification including 1D profiles, 2D isodose maps, automated verification such as sum, (absolute) difference, correlation, multiplication, DTA (distance to agreement) calculation and Gamma method including threshold and gamma angle
- Extensive cursor analysis functions such as zoom, distance, position, etc.
- Histograms (for data sets and results)
- Region of interest (ROI) analysis
- Advanced interpolation method "Fermi Fit" for accurate field width and penumbra calculation
- Intuitive macro set up via graphical user interface

Advanced Film Panel:

- Complete interface to support film scanning Vidar VXR 16 Dosimetry Pro, Vidar DosimetryPro Advantage and Kodak (Lumisys)
- Scanner calibration procedure (ADC to OD)
- Complete procedure for ADC-to-Dose calibration via templates (film calibration)
- Scanner artifacts correction method with extraction of one RGB channel

MLC-QA Tools:

- Multiple-row analysis interface suitable for comparison of measured with standard MLC patterns
- Multiple profile analysis with field width and penumbra calculation

Advanced Print Report

- Flexible ASCII export and printing functions, extensive help file support
- Cursor on the images, gamma values, flexible line width and other information

Ordering Information

BS21-000 OmniPro-ImRT analysis software
for film and basic machine QA

InViVo Dosimetry

DPD Electrometer Systems



DPD-3

Ordering Information

3-channel system (to be used stand alone or with OmniPro-InViDos) including 20m 3-detector cable (Item Number 973-050)

Note: If used with OmniPro-InViDos software, the following cable is required for connection to the PC: Item number 973-320 (please see subsection on "In-ViVo Dosimetry Upgrades").

Note: Only for countries not requiring CE mark

973-000 DPD-3, 230V Version

973-010 DPD-3, 115V Version

DPD-12

Ordering Information

12-channel system
(only to be used with application software)

Including:

- **emX** 12 -channel electrometer (Item Number 972-000)
- 15 m RS232 cable (DPD to PC), 10 m detector cable (Item Number 972-310)

972-010 DPD-12, 230V Version

972-115 DPD-12, 115V Version



Electrometers

	DPD-3	DPD-12 (emX)
Input channels:	3	12 (24 in cascade)
Range dose:	up to 7 Gy*	up to 7 Gy*
Accuracy:	better than 0.5% (zero drift compensated)	better than 0.5% (zero drift compensated)
Connectors:	3 x BNC	37 pin D-sub
Cable:	3 x 20 m BNC-BNC	15 m RS-232, 10 m detector cable
Front display:	yes	no
Interface:	RS-232	RS-232

OmniPro-InViDos

Advanced in vivo dosimetry software

Management system used with DPD-3, DPD -12

A management system for efficient and traceable in vivo dosimetry in stand-alone or network configuration.

Patient database with import function (option) from Verification system, templates for standard treatments and dose per field and fraction.

Automatically applied calibration and corrections factors on individual measurement points enables very high accuracy.

Book keeping of accumulated dose to each detector and calibration wizard optimises the calibration maintenance.

Free upgrade releases are included during the first year after delivery. One workstation license.

Package includes user manual in English.



For recommended computer and database server requirements, please refer to the specifications provided under the separate section entitled “System Requirements”.

Ordering Information

- | | |
|---------|---|
| 975-000 | OmniPro-InViDos advanced in vivo dosimetry software |
| 975-100 | Application training on OmniPro-InViDos for 2 days on site |

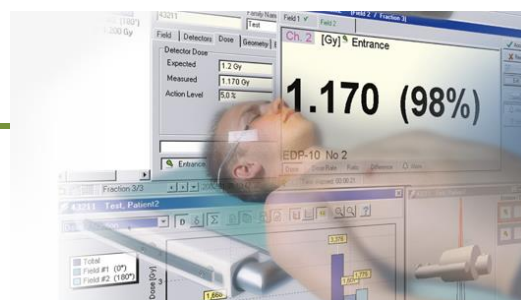
OmniPro-InViDos Options

Ordering Information

- | | |
|---------|--|
| 975-010 | Additional full OmniPro-InViDos license |
| 975-011 | Additional limited OmniPro-InViDos license for evaluation only |

Import of the set-up-data, and measurement synchronisation

- | | |
|---------|---|
| 975-030 | OmniPro-InViDos interface to verification system Helax-Visir |
| 975-031 | OmniPro-InViDos interface to verification system Lantis |
| 975-032 | OmniPro-InViDos interface to verification system Varis-Vision |
| 975-033 | OmniPro-InViDos interface to verification system MOSAIQ |
| 975-034 | OmniPro-InViDos interface to verification system Aria |



Diode Detectors (Teletherapy)

Ordering Information

967-004**EDD-2, diode detector
for electrons, 4 m cable**

Diode detector with two detector chips for low angular dependence ($\leq 2\%$) and 2 mm water equivalent build-up.

4.0 m connecting cable.

**966-004****EDD-5, diode detector for risk organs,
small drop-formed, 4 m cable**

This detector is suitable for risk organ monitoring and can easily be used on a curved surface. It can also be used outside the primary beam.

Diode detector in a drop-formed housing, with two detector chips for low angular dependence ($\leq 2\%$) and 5 mm water equivalent build-up.

4.0 m connecting cable.

**963-004****EDP-5, diode detector
for electrons and cobalt, 4 m cable**

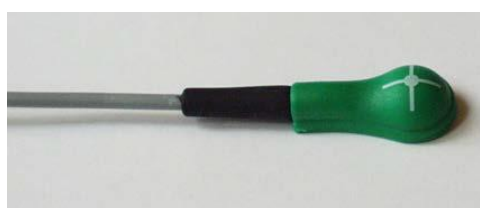
Diode detector with 5 mm water equivalent build-up.

4.0 m connecting cable.

**965-004****EDP-10, diode detector
for photons (4 - 8 MV), 4 m cable**

Diode detector with 10 mm water equivalent build-up.

4.0 m connecting cable.



Ordering Information

961-004

**EDP-15, diode detector
for photons (6 - 12 MV), 4 m cable**

Diode detector with 15 mm water equivalent
build-up.

4.0 m connecting cable.



964-004

**EDP-20, diode detector
for photons (8 - 16 MV), 4 m cable**

Diode detector with 20 mm water equivalent
build-up.

4.0 m connecting cable.



969-004

**EDP-HL, Diode detector
for photons (16 - 25 MV), 4 m cable**

For lowest perturbation.

Diode detector
with water equivalent build-up.

4.0 m connecting cable.



Note: *Detectors with 2m cable may be ordered on request
with part numbers ending in -002 instead of -004.*

Application area	Photons	Electrons	Cobalt
Entrance dose, few corrections	EDP-10 ^{3G} (4-8 MV) EDP-15 ^{3G} (6-12 MV) EDP-20 ^{3G} (8-16 MV) EDP-HL ^{3G} (16-25 MV) ^a	EDD-2 ^{3G} EDP-5 ^{3G}	EDP-5 ^{3G}
Total body irradiation (TBI)	EDD-5 ^{3G} ^b	-	-
Entrance dose, low field perturbation	EDD-2 ^{3G} EDP-HL ^{3G} (16-25 MV)	EDD-2 ^{3G}	EDD-2 ^{3G}
Exit dose	EDD-2 ^{3G} , any detector can be used	-	EDD-2 ^{3G}
Risk organ monitoring, measurements outside the field	EDD-5 ^{3G}	EDD-5 ^{3G}	EDD-5 ^{3G}



Detector	Application area	Water equivalent build-up	Sensitivity decrease measured at 250 Gy
EDD-2 ^{3G} (grey)	Entrance dose, few corrections, low field perturbation, low directional dependence, exit dose	2 mm	<1% (less than the meas. accuracy in Co ⁶⁰)
EDD-5 ^{3G} (black)	Risk organ monitoring, TBI, low directional dependence, exit dose	5 mm, drop shaped encaps.	<1% (less than the meas. accuracy in Co ⁶⁰)
EDP-5 ^{3G} (blue)	Entrance dose, few corrections, exit dose	5 mm	<1% (less than the meas. accuracy in Co ⁶⁰)
EDP-10 ^{3G} (green)	4-8 MV (Photons), entrance dose, few corrections, exit dose	10 mm	<1% (less than the meas. accuracy) at 5 MV
EDP-15 ^{3G} (red)	6-12 MV (Photons), entrance dose, few corrections, exit dose	15 mm	<1% (less than the meas. accuracy) at 6 MV
EDP-20 ^{3G} (yellow)	8-16 MV (Photons), entrance dose, few corrections, exit dose	20 mm	1.2% at 15 MV
EDP-HL ^{3G} (white)	16-25 MV (Photons), entrance dose, few corrections, low field perturbation, exit dose	14 mm	4% at 21 MV

Accessories

Ordering Information

972-500

Mobile detector support system for 12 detectors mounted on castors
for easy movement and positioning.



Advanced mobile detector support system, supporting up to 12 detectors (4m recommended) on castors for easy movement and positioning.

The mechanics let you pull out the detector in any length up to 3.5m (1.7m) at constant force, attached simply by moving the cable towards the central axis of the support.

The detector retracts automatically when the cable is moved out from the centre of the support.

(Used with item numbers 972-010 or 972-310 or 972-311.)

973-050

20 m 3-detector cable (extra cable for DPD-3)

972-310

10 m 12-detector cable and 15 m RS232 cable

972-311

20 m 12-detector cable and 1.5 m RS232 cable

Ordering Information

950-000

Calibration phantom, tempered

To be used when calibrating In-vivo detectors. The phantom is filled with approximately 40°C water to simulate skin temperature on the surface of the phantom.

Includes thermometer.



968-000

Symmetry Phantom for Quality Control utilizing in-vivo detector system

300x300 mm Perspex phantom with scales and machined tracks for EDE-5, EDP-10, EDP-15, EDP-20 and EDP-30.

The phantom is easy to use for QC checks e.g. field symmetry and beam flatness.

In-ViVo Dosimetry Upgrades

Ordering Information

972-320

emX-upgrade for OmniPro-InViDos
(required for emX 0145 and older)

Note: The emX needs to be sent to the factory.

973-320

Connection cable DPD-3 to OmniPro-InViDos

971-800

DPD-510 upgrade for OmniPro-InViDos
(all DPD-510 systems)

Note: The DPD-510 needs to be sent to the factory.

975-200

Upgrade from OmniPro-InViDos to latest version of OmniPro-InViDos

975-210

Upgrade from DPDpc to OmniPro-InViDos

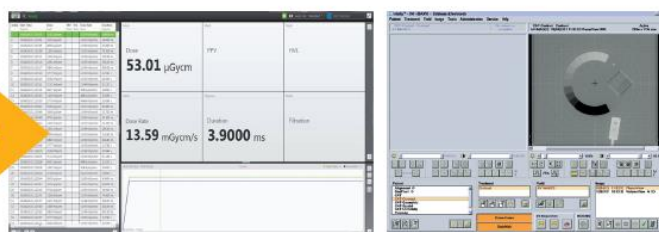
Medical Imaging QA in Radiotherapy

IBA offers a range of solution kits for QA of kV imaging systems in your RT department, catering to different needs and budget. Each solution kit is designed for speed and accuracy, and simplicity of use.

Complete Dose and Image QA for Linac Imaging systems (IGRT)



1) Setup test plate and MagicMaX XR multidetector



2) Comprehensive instant analysis of imaging dose and quality

Users maximize efficiency and minimize errors with the QA of their Imaging Dose, and with the workflow efficiency provided by our solution kit.

Analysis of the beam and IGRT imager is done in a single shot, with minimal set-up.

MagicMaX IGRT kV Kits

Complete solution kits
for QA of kV imaging
systems in your RT
department

There are three types of packages to suit
your needs and budget.



For 2D and 3D Kits

Multimeter MagicMaX-Universal, Basic Unit

Multimeter MagicMaX of the latest generation,
developed in accordance with IEC 61674.

Flexible solution for exact dose- and kV-measurements
at all X-ray units including CT.

Features:

- USB based system for use with PC/laptop
- Includes MagicMaX measuring software with Excel-supported templates
- Suitable for connection of solid state detectors and ionization chambers

Measurement values:

- Dose length product (DLP), dose, dose per pulse
- Dose length product rate, dose rate
- kVp*, PPV*
- Total filtration*
- Half value layer (HVL)*
- Waveform

**only in connection with Multidetector XR or XM*

Includes:

USB-stick with Software, USB-cable 1 m, 2 x USB-prolonging cable 5 m and detector holder
(only for XR- or XM Multidetector).



Ionization chamber DCT10-MM

Fischer connector / isolating

For use with **Multimeter MagicMaX-Universal**.

Suitable for DLP (mGy*cm) measurements on CT scanners.

Total active length:	10 cm
Energy range:	100 kV - 150 kV
Dose measuring range:	0.01 mGy – 15 Gy
Dose rate measuring range:	0.10 mGy/s - 0.05 Gy/s
Dose length measuring range:	0.1 mGycm - 150 Gycm
Dose rate length measuring range:	1.0 mGycm/s - 0.5 Gycm/s
Uncertainty:	< 5 %



Includes 1 adapter for ionisation chamber DCT10-MM

Trolley Case "MagicMaX CT"

Offering space for **Multimeter MagicMaX-Universal**, ion-chamber **DCT10-MM** (or DCT30-MM), Illuminance detector **MM-LS**, USB-stick with Software as well as USB-cable 1 m and USB-prolonging cable 5 m.

Furthermore, the following QA-equipment can also be stored:

2- or 3-part PMMA CT-phantom including insert parts and ion-chamber adapter.

The trolley case can also accommodate the **Multidetectors XR/XM** as well as **MagicMaX Current probe**, if necessary.



Carrying case "MagicMaX Full-QA" (for Primus A and PMMA-attenuation body)

Offering space for **Primus A** test device and **PMMA attenuation body** for Rad/Flu as well as **PASMAM 1054** phantom for Mammography.

Note:

This case can be easily placed on top of the above-mentioned Trolley case.



For 2D Kit

XR Multi Detector

Fischer connector / pluggable

Solid state Multi detector for measurements of kVp, PPV, HVL, dose, dose rate, dose per pulse, exposure time, wave form and total filtration.

Measurement ranges:

Dose:	600 nGy – 3 Gy or 68.2 μ R – 340.9 R, $\leq \pm 5 \%$
Dose rate:	90 nGy/s – 160 mGy/s or 10.2 μ R/s – 18.18 R/s, $\leq \pm 5 \%$
Dose per pulse:	600 nGy/pulse – 3 Gy/pulse or 68.2 μ R/pulse – 340.9 R/pulse, $\leq \pm 5 \%$
Pulse rate:	1 - 1000 pulse/s (at highest sampling rate)
Pulse length:	1.0 ms - 300 s
Energy dependence:	Auto corrected for 2 mm to 22 mm (0.08" – 0.86") total filtration for dose rates above 200 μ Gy/s
kV:	40 - 160 kV (Rad/Flu) or 75 – 160 kV (CT),
Total filtration:	2 - 22 mm (0.08" - 0.87") for Rad/Flu 2 - 22 mm (0.08" – 0.87") for CT
Sensitivity:	3 mm (0.11") Al, 50 kV, 1 mA @ 50 cm (19.7") for Rad/Flu 6 mm (0.24") Al, 90 kV, 0.5 mA @ 50 cm (19.7") for CT
Time:	2 ms – 300 s, 1 – 0.3x10 ⁶ pulse with accuracy 1 % or 0.2 ms, ± 1 pulse
HVL:	1.3 mm – 10 mm with accuracy $\pm 10 \%$ or ± 0.2 mm (0.008") Al
Wave form:	kV _p , internal & external dose rate displayed 10 ³ - 10 ⁴ samples per second sampling rate 300 s (depending on PC memory space) maximum recording time 0.1 ms time resolution



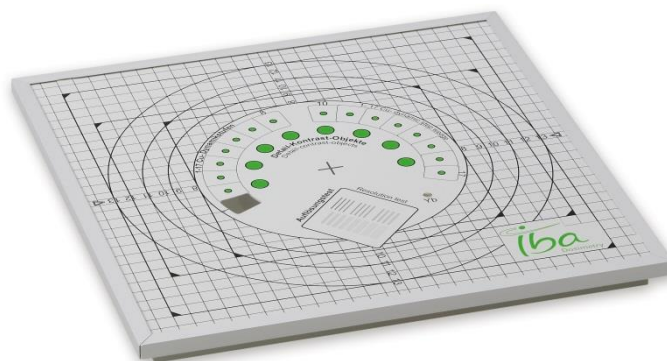
Test device Primus

Suitable for quality checks at digital/conventional fluoroscopic and radiographic X-ray units.

Dimensions: 300 mm x 300 mm x 18,5 mm

Please observe:

An attenuation body is necessary to be used together with test device Primus A.

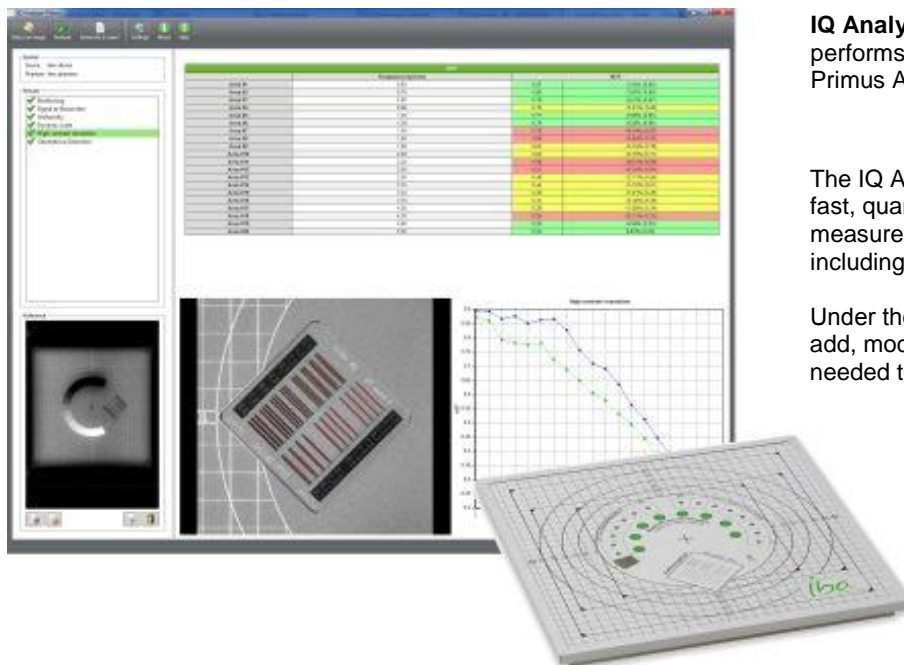


PMMA-attenuation body for test device Primus

Consisting of 30 mm PMMA and 1 mm Cu.

Dimensions: 300 x 300 x 31 mm

IQ Analyzer Primus Software



IQ Analyzer Primus is a software which performs quality checks on images taken with Primus A in three simple steps:

Select – Analyze – Results.

The IQ Analyzer Primus can perform automatic, fast, quantitative and reproducible constancy measurement on multiple imaging modalities, including CR, DR, DX, XA and RF systems.

Under the 'Setting' session, users can freely add, modify or delete the X-ray system which needed to for quality assurance.

Analyzer Primus provides also an efficient selection and comparison of test phantom - Primus A images from your local network and PACS system.

The software includes a DICOM header tool for fast and easy selection of images. An evaluation of six individual IQ parameters is performed automatically in less than one minute.

The parameters include positioning, signal to noise ratio, uniformity, dynamic scale, high contrast resolution and geometrical distortion.

Users definable IQ tolerances in both absolute and percentage values, allow for simple red, yellow, and green color coded pass / fail criteria. IQ Analyzer Primus reports are available in both PDF and MS Excel formats.

With IQ Analyzer Primus, users can now obtain results on image quality checks in less than ten seconds.

Technical Specification/ System requirement:

Processor: Intel® Core 2 Duo
 Memory : 1 Go DDRAM
 Minimum screen resolution : 1024 x 768
 Windows based system (XP, Vista, 7, 8).

Carrying case "MagicMaX Rad-Flu"

Offering space for Multimeter MagicMaX-Universal, Multidetector XR, Illuminance detector MM-LS, MagicMaX current probe, USB-stick with Software as well as accessories like USB-cables, detector holder etc.

Furthermore also the following QA-equipment can be stored:
 Primus test plate and Primus PMMA attenuator.



Available CT Phantoms for the 3D Kits

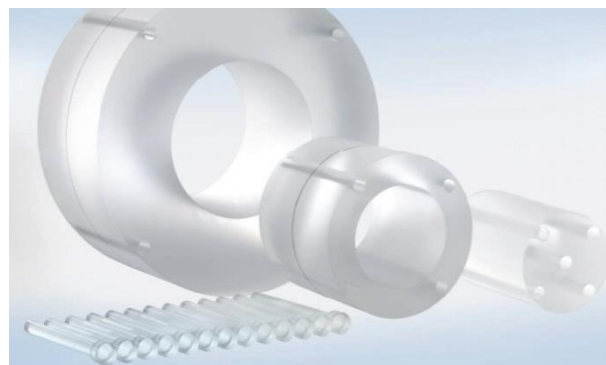
3-part PMMA CT-Phantom (Head / Body / Pediatric)

Phantom for CTDI-measurements in CT
designed to image pediatric and adult head and body.

In accordance with FDA performance standard
for diagnostic X-ray systems.

Consisting of:

- 1 pediatric Head Phantom, 10 cm diameter, 5 holes
- 1 adult Head-/pediatric Body Phantom, 16 cm diameter, 4 holes
- 1 adult Body Phantom, 32 cm diameter, 4 holes
(The above-mentioned 3 Phantoms fit into each other!)
- 13 insert parts for CT-phantom



Alternative to 3-part PMMA CT-Phantom

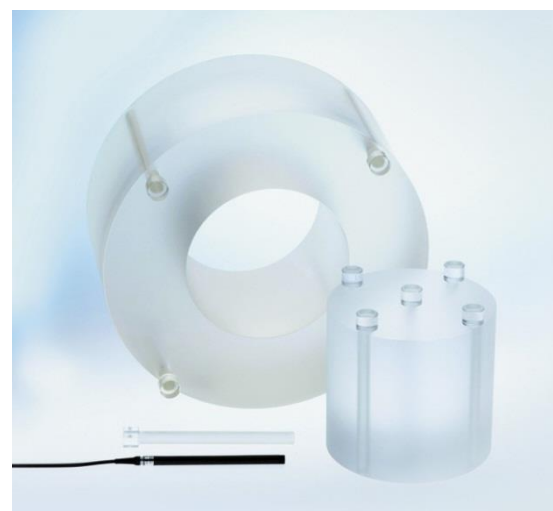
PMMA CT Phantom (Head and Body)

Phantom for CTDI-measurements
according to IEC 60601-2-44, IEC 61223-3-5, -2-6.

Especially designed for neuro and whole body CT Scanners,
measurement of patient dose and scatter, peak dose measurements,
CT DI measurements, isodose curve dose distribution plotting and
measurement of total dose at a given location due to a series of
incremental scans.

Consisting of:

- 1 Head Phantom (adult) / Body (pediatric),
16 cm diameter, five holes
- 1 Body Annulus, 32 cm diameter, four holes
- 9 Insert parts for CT-phantom



Ordering Information

	VD0250141 MagicMaX IGRT kV Kit, combined 2D and 3D kits	VD0250142 MagicMaX IGRT kV, 2D Kit	VD0250143 MagicMaX IGRT kV, 3D Kit
<u>Composed of the following items:</u>			
VD0202010 Multimeter MagicMaX-Universal, Basic Unit	●	●	●
VD1020110 Ionization chamber DCT10-MM	●		●
VD0202030 XR Multi detector	●	●	
VD0203520 Test device Primus	●	●	
VD0203521 PMMA-attenuation body for test device Primus	●	●	
VD0225134 Carrying case MagicMaX Full-QA (for Primus L and PMMA-attenuation body)	●		
VD0225133 Trolley case "MagicMaX CT"	●		●
VD0225131 Carrying case "MagicMaX Rad-Flu"		●	
<i>Optional</i>			
VD0203530 IQ Analyzer Primus Software	●	●	
<u>CT Phantom</u>			
VD1003105 3-part PMMA CT-Phantom (Head / Body / Pediatric)	●		●
<i>Alternative</i>			
VD1003110 PMMA CT Phantom (head and body)	●		●

System Requirements

IBA develops several packages according to your needs and budget. Accordingly, the different IBA software applications have varying computer and database requirements.

This section provides you with the minimum system requirements for the following applications:

myQA

Compass

Dolphin

and current OmniPro Software

It is always recommended to use the latest type of computer, especially when using large data sets.



For the following modules:

- myQA Platform
- myQA Cloud
- myQA Cockpit
- myQA Patients
- myQA Machines
- myQA FastTrack

System Requirements	
Operating System	Windows 7 32-bit and 64-bit; Windows 8 32-bit and 64-bit
Processor	Intel Core i7 or equivalent recommended, minimum 8 GB RAM
Network	Ethernet port RJ-45 with minimum 10 Mbit/s
Screen Resolution	Minimum 1280x720, full HD 1920x1080 recommended

Database Requirements	
<ul style="list-style-type: none">• Microsoft SQL Server 2008 R2 (on Windows 7) or Microsoft SQL Server 2012 (on Windows 8, 64 bit) versions supported for high data safety on server or locally installed	
<ul style="list-style-type: none">• Microsoft SQL Server 2012 Express Version (10GB space) delivered free of charge with the installation CD	



Operating System	Windows 7 and Windows 8.1, 64-bit, US English
Additional Software	.Net-Framework 4.0 (Internet Explorer 5.01 or newer is required for installation). <i>NOTE:</i> <i>Please activate .NET Framework 3.5 if the Operating System is Windows 8 / 8.1</i>
Processor	Minimum Quad Core Pentium processor, 2.0 GHz or better. Recommended: i7 processor with Hyperthreading (or equivalent), 2.0 GHz or better
RAM	8 GB minimum, 16 GB recommended
Hard Disk	1.5 TB for data storage (supports app. 5000 patient records), 400 MB for the application program, and 2 GB for the .NET 4.0 framework
Network	Ethernet connection (RJ-45), second network card in PC for device if simultaneous access to LAN and device with direct connection is required. The network card connecting to a remote database should have a speed of 1 GB/s. Intel PRO/1000 MT is recommended.
NVIDIA Graphics Card	Capable of OpenGL standard 2.1 or above with 1024 MB Recommended: NVIDIA GeForce 500 Series/Quadro Series or newer <i>NOTE:</i> <i>A NVIDIA graphics card is mandatory (see the above requirements). The computer should always use the high-performance NVIDIA processor for the applications. In addition the graphics card acceleration should never be suspended e.g. for laptops which are not connected to the external power supply.</i>
Screen Resolution	HD 1920 x 1080, 1920 x 1200 recommended

Recommended database server requirements:

Operating system for remote server	Windows Server 2008 R2 and 2012, 64-bit; US English
Database	Microsoft SQL server 2008 R2 SP2 or 2012, Workgroup Edition (or higher edition). The Express Edition can be used, providing 10GB of space for each database.

Operating system and database server are supported in the following combinations:

Local	Windows 7	Windows 8.1
SQL Server 2008	supported	not supported
SQL Server 2012	supported	supported

Remote	Client	
Server installation:	Windows 7	Windows 8.1
Windows 7 SQL Server 2008	supported	not supported
Windows 7 SQL Server 2012	supported	not supported
Windows Server 2008 SQL Server 2008	supported	not supported
Windows Server 2008 SQL Server 2012	supported	not supported
Windows 8.1 SQL Server 2012	not supported	supported
Windows Server 2012 SQL Server 2012	not supported	supported

Filestream	Remote clients must have streaming access to FILESTREAM data
Access rights	The user who installs the system needs to be both the Administrator on the machine and the Sysadmin on the database
Processor	A single 4 core 2.6 GHz Nehalem-based Xeon CPU or better
RAM	If a server is installed, 32 GB of DDR3 ECC RAM is recommended. A minimum of 16 GB should be available.
Hard Disk	OS drive can be under 200 GB in size and should be in a RAID 1 configuration. RAID 10 is recommended as the underlying disk structure. 1.5 TB of effective space split across logical drives for (a) Data and Logs and (b) Filestream is recommended.
Ethernet Connection	Minimum 1 GB/s Ethernet. Where available, teaming of NICs should be considered.

- It may be beneficial to team one or more network cards specifically for the SQL Server Service (for this multiple network cards would be required).
- Possible backups and any other client related activities should not use the same communication route.



Operating System	Windows 7 and Windows 8.1, 64-bit, US English
Additional Software	.Net-Framework 4.0 (Internet Explorer 5.01 or newer is required for installation). <i>NOTE:</i> <i>Please activate .NET Framework 3.5 if the Operating System is Windows 8 / 8.1</i>
Processor	Minimum Quad Core Pentium processor, 2.0 GHz or better. Recommended: i7 processor with Hyperthreading (or equivalent), 2.0 GHz or better
RAM	8 GB minimum, 16 GB recommended
Hard Disk	1.5 TB for data storage (supports app. 5000 patient records), 400 MB for the application program, and 2 GB for the .NET 4.0 framework
Network	Ethernet connection (RJ-45), second network card in PC for device if simultaneous access to LAN and device with direct connection is required. The network card connecting to a remote database should have a speed of 1 GB/s. Intel PRO/1000 MT is recommended.
NVIDIA Graphics Card	Capable of OpenGL standard 2.1 or above with 1024 MB Recommended: NVIDIA GeForce 500 Series/Quadro Series or newer <i>NOTE:</i> <i>A NVIDIA graphics card is mandatory (see the above requirements).</i> <i>The computer should always use the high-performance NVIDIA processor for the applications. In addition the graphics card acceleration should never be suspended e.g. for laptops which are not connected to the external power supply.</i>
Screen Resolution	HD 1920 x 1080, 1920 x 1200 recommended

Note: A wireless access point is required for the communication with the device.

Ethernet connection: RJ-45 connection via TCP/IP (10/100 baseT),
wireless standard: WiFi acc. to 802.11 g/b

Recommended database server requirements:

Operating system for remote server	Windows Server 2008 R2 and 2012, 64-bit; US English
Database	Microsoft SQL server 2008 R2 SP2 or 2012, Workgroup Edition (or higher edition). The Express Edition can be used, providing 10GB of space for each database.

Operating system and database server are supported in the following combinations:

Local	Windows 7	Windows 8.1
SQL Server 2008	supported	not supported
SQL Server 2012	supported	supported

Remote	Client	
Server installation:	Windows 7	Windows 8.1
Windows 7 SQL Server 2008	supported	not supported
Windows 7 SQL Server 2012	supported	not supported
Windows Server 2008 SQL Server 2008	supported	not supported
Windows Server 2008 SQL Server 2012	supported	not supported
Windows 8.1 SQL Server 2012	not supported	supported
Windows Server 2012 SQL Server 2012	not supported	supported

Filestream	Remote clients must have streaming access to FILESTREAM data
Access rights	The user who installs the system needs to be both the Administrator on the machine and the Sysadmin on the database
Processor	A single 4 core 2.6 GHz Nehalem-based Xeon CPU or better
RAM	If a server is installed, 32 GB of DDR3 ECC RAM is recommended. A minimum of 16 GB should be available.
Hard Disk	OS drive can be under 200 GB in size and should be in a RAID 1 configuration. RAID 10 is recommended as the underlying disk structure. 1.5 TB of effective space split across logical drives for (a) Data and Logs and (b) Filestream is recommended.
Ethernet Connection	Minimum 1 GB/s Ethernet. Where available, teaming of NICs should be considered.

- It may be beneficial to team one or more network cards specifically for the SQL Server Service (for this multiple network cards would be required).
- Possible backups and any other client related activities should not use the same communication route.

OmniPro-I'mRT

Analysis Software for Film and Basic Machine QA

Operating System	Microsoft Windows 7 32/64-bit, US English versions only.
Processor	Processor Pentium 1,8 GHz, Dual Core 2 GHz recommended
RAM	Minimum 1 GB RAM, 4 GB recommended
Hard Disk	Minimum 160 MB free disk space on hard disk before installation, additional 40 GB for archiving of data is strongly recommended
Network	Ethernet port RJ-45
Screen Resolution	Minimum 1024 x 768 Pixel (32-bit), 1280 x 1024 recommended

OmniPro-InViDos

Dosimetry management system to handle all tasks of InVivo Dosimetry

Operating System	Windows 7 64-bit, US English versions only.
Processor	Pentium (or equivalent), 2 GHz
RAM	1 GB RAM
Hard Disk	120 GB
Ports	Serial port, RS-232, for electrometer communication
Graphics Card	Supporting 16-bit colors, and 1024 x 768 pixels
	Microsoft Data Access Components (MDAC) version 2.7 or later
	Open GL drivers

Training Courses at the International Competence Center (ICC)

About the ICC



The innovative International Competence Center (ICC) training facility was opened at the IBA Dosimetry headquarters in Schwarzenbruck, Germany, in July 2012.

The ICC is the first training center in the world where trainees can simulate treatment verification and quality assurance systems without patient traffic, in a facility that mirrors a real clinical environment.

The aim of the ICC is to train healthcare professionals in using Radiation Therapy and Medical Imaging Dosimetry equipment safer and more efficiently.

The training courses will be held by renowned clinical speakers as well as by highly qualified IBA staff members.

Apart from the trainings in the ICC facilities at the IBA Dosimetry headquarters we will offer courses in selected top-level clinics worldwide.

Striving for the best quality in modern radiation therapy

This course is DGMP-certified.

- Absolute Dosimetry
- Plan QA (2D and 3D)
- Multiple hands-on sessions

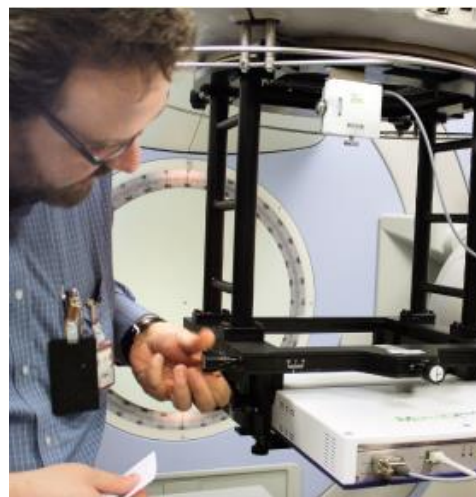
Duration: 2 days

Language: English

Location: International Competence Center (ICC) in Schwarzenbruck, Germany

Ordering Information

Course# ICC_SBK_RT_EN_I



New challenges in Absolute Dosimetry

“Learn to improve your precision right from the beginning”

This course is DGMP-certified.

- Protocols for Absolute Dosimetry (TRS 398, DIN 6800, TG51)
- Small-Field Dosimetry
- Dosimetry for Flattening-Filter-Free LINACS
- Individual characteristics of various LINAC models
- Dosimetry Audit, e.g. MTK (Germany)
- Hands-on (1D and 3D Water Phantom)
- Daily QA

Duration: 2 days

Language: English

Location: International Competence Center (ICC) in Schwarzenbruck, Germany



Ordering Information

Course# ICC_SBK_RT_EN_N

Online Dosimetry for IMRT/VMAT treatments

A training course in cooperation with UMM (Universitätsmedizin Mannheim)

- Introduction to DOLPHIN 2D transmission detector
- Introduction to COMPASS 3D dosimetry software
- Rationale for online dosimetry
- Clinical considerations
- Replacement of pretreatment QA
- Online Dosimetry for Hypofractionation and SBRT

Duration: 2.5 days

Language: English

Location: International Competence Center (ICC) in
Schwarzenbruck, Germany



Ordering Information

Course# ICC_SBK_RT_IMRT

Efficient beam scanning & (IMRT) TPS commissioning

**“Learn how to commission
your Linac and TPS fastest”**

- Commissioning of FF free LINAC
- Efficient usage of BluePhantom² / OmniPro-Accept
- Small field dosimetry

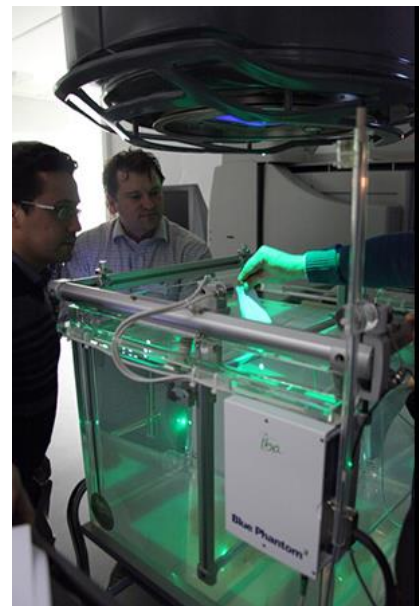
Duration: 2.5 days

Language: English

Location: International Competence Center (ICC) in
Schwarzenbruck, Germany

Ordering Information

Course# ICC_SBK_RT_IMRD



Beam Dosimetry and VMAT QA

- Blue Phantom Radiation Field Analyzer and OmniPro-Accept
- Hands-on: Setting up of Blue Phantom
- Relative & absolute dose measurements with photons and electrons
- Overview of small field Dosimetry
- Hands-on: Calibration & commissioning of I'mRT Matrixx - 2D
- Overview of VMAT patient specific QA
- Hands-on: Compass Beam data and detector commissioning
- Hands-on: Patient specific QA using compass 3D Dosimetry system

Duration: 3 days
Language: English
Location: to be held in India



Ordering Information

Course# ICC_IND_RT_EN_B

ICC Courses to be held in German language

Einführung in die Konstanzprüfung an digitalen Aufnahme- und Durchleuchtungsgeräten



Grundlagen der Konstanzprüfung nach der Qualitätssicherungsrichtlinie (QS-RL)

Praktische Übungen in kleinen Gruppen.

- Konstanzprüfung nach DIN 6868-13
- Konstanzprüfung nach DIN 6868-4
- Konstanzprüfung an Bildwiedergabegeräten nach QS-Richtlinie und DIN V 6868-57
- praktische Übungen nach DIN 6868-4 und -13 (Siemens Axiom Luminos dRF)
- praktische Übungen nach QS-Richtlinie und DIN V 6868-57 (Bildwiedergabegeräte)

Dauer: 2 Tage
Sprache: Deutsch
Ort: International Competence Center (ICC) in
Schwarzenbruck, Bayern, Deutschland



Ordering Information

Course# ICC_SBK_MI_DE_D

Imaging QA



Training zur neuen DIN 6868-157: Abnahme- und Konstanzprüfung nach RöV an Bildwiedergabesystemen in ihrer Umgebung

- Training (Vortrag & Hands-on) für die Abnahme- und Konstanzprüfung gemäß der neuen DIN 6868-157:
Abnahme- und Konstanzprüfung nach RöV an Bildwiedergabesystemen in ihrer Umgebung
- Vorstellung der neuen QS-RL (Qualitätssicherungs-Richtlinie)

Dauer: 2 Tage
Sprache: Deutsch
Ort: International Competence Center (ICC) in
Schwarzenbruck, Bayern, Deutschland

Ordering Information

Course# ICC_SBK_MI_DE_A

Kurse zur Aktualisierung der Fachkunde im Strahlenschutz



In Zusammenarbeit mit
dem HDT – Haus der Technik (Essen)

- 1-Tag Kurs zur Aktualisierung der Fachkunde im Strahlenschutz, Fachkundegruppen S4.1, S4.2 und S4.3
- 1-Tag Kurs zur Aktualisierung der Fachkunde im Strahlenschutz, Fachkundegruppen S1.1, S1.2, S1.3, S2.1, S2.2, S2.3, S3.1, S3.2 und S6.1
- 1-Tag Kurs zur Aktualisierung der Fachkunde im Strahlenschutz, Fachkundegruppe S5
- 2-Tage Kurs zur Aktualisierung der Fachkunde im Strahlenschutz, Fachkundegruppen S6.2, S6.3 und S6.4 (Beschleuniger)

Sprache: Deutsch

Ort: International Competence Center (ICC) in Schwarzenbruck, Bayern, Deutschland

Anmeldung online

www.icc-ibadosimetry.com/course_fachkundeimstrahlenschutz.php

